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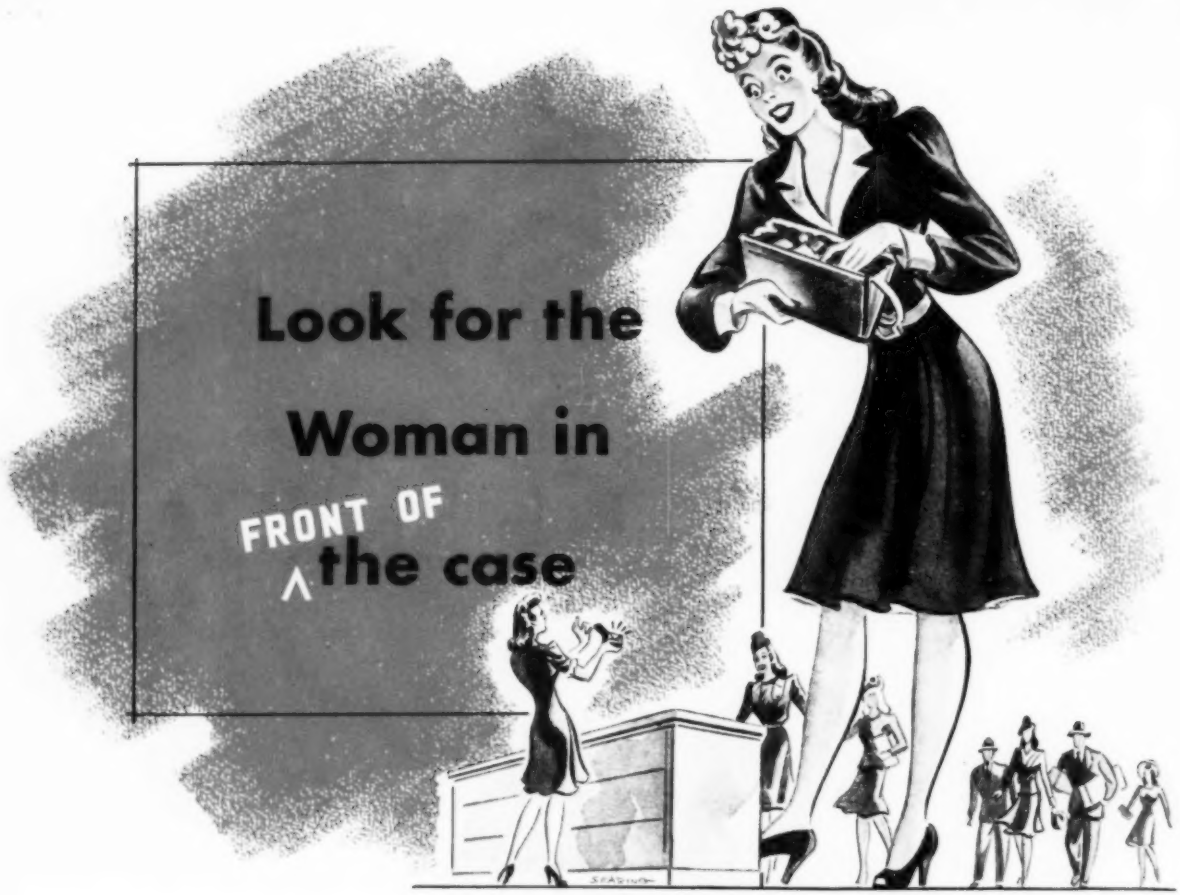

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AS THE EDITOR SEES IT

CEILING prices for yellow bar laundry soap have been increased twenty per cent by OPA. Discovering after these many moons that manufacturers had just about quit making this old laundry soap stand-by, that it had never been too profitable an item and had been a dog in the profit manger for the past two years, and that soapers had been diverting fats and oils to other uses, OPA has at last raised the ceiling. This relatively sharp boost in permitted ceiling prices has now been made in the hope that a resumption in the production of yellow laundry soap will follow.

The conditions which brought this latest OPA decision to raise ceilings have been in effect for two years or more. That it should take OPA this length of time to discover that yellow bar soap had just about disappeared from the market, and to act in relief of the situation is strictly in accordance with OPA form. Twenty per cent is not too little, but it most certainly comes too late.

PROTESTING to the Secretary of Agriculture against the exportation of soaps in view of the present oil and fat shortage in the United States, and against the classification as ex-quota of fats used to make export soap, a well-known soap executive has sent us a copy of his complaint. In his covering communication to us, he ends with the statement: "What a racket our Government creates for everybody!"

In a preceding mail, we received a further protest from Puerto Rico against the heavy imports of soaps into that island from the United States, and a warning that if this continues, the ruination of the Puerto Rican soap industry will be complete.

That this entire soap export situation has "smelled from herring" for a long time, everybody has obviously been aware except those who should know the facts, the U. S. Department of Agriculture. We cannot believe that USDA officials do not know what is going on—and why they do not shut down on the racket is a puzzle to us.

In the interests of preserving our soap supply in the United States and preventing it being dissipated in those export channels where it is not needed, we suggest that the following be acted upon immediately by USDA: 1. That no American toilet soap be exported until further notice. 2. That no soap of any kind be exported to any country except to formerly occupied or devastated areas. 3. That fats used in export soaps be charged against quotas exactly as that used for domestic soaps except where the soap is purchased by an American Government agency, and in this latter case the Government furnish the tallow from plentiful Argentine supplies.

We feel that this would end the export soap racket and end it quickly—that is if the USDA wants to end it!

AS TIME goes on, we are gradually becoming convinced that too many laws, rules and regulations, all aimed to modify or defeat normal operation of the law of supply and demand ,are playing a growing part in preventing a return to normal production and flow of commerce. Recently, before the Toilet Goods Association in New York, N. N. Dalton, well-known authority on oil and fat production and markets, stated that the present shortage of oils and fats was due in a considerable degree to the stifling of the law of supply and demand by government regula-

tions. He pictured the outlook as not so bad but that it might be brought back close to normal within a year or so if supply and demand dictated the operations of producers and consumers. He admitted that the immediate effects of the removal of price regulations and soap fat quotas might be drastic, but that in a free market, correction of present conditions would be rapid. With a continuation of the regulations and restrictions now in force, the present shortages might drag on indefinitely and in the end still face the same set of conditions.

Although we have felt that OPA regulations and oil and fat quotas for the soap kettle have tended to hold an umbrella over the smaller manufacturer, we are beginning to wonder if they are not simply postponing the inevitable,—putting off the day when we will have to face the music,—while ceiling prices in the meantime do their part to stifle production. The recent opinion by Dalton has us speculating. Shall we take the plunge now in the hope that it may do some good,—or put it off a year to a time when conditions may or may not be better?

DUE to the present acute scarcity of oils and fats, smaller buyers of both edible and industrial grades may be victimized if they do not watch their step. Reports of heavier than usual sales of white mineral oils in certain directions might indicate that these oils are being used to adulterate fatty oils, especially edible grades. In cooking or salad oils, even though the presence of mineral oil were not stated or known, the consequences might not be serious. In fact, mineral oil has long been purchased for edible uses. But if adulterated fatty oils of this type find their way to a soap kettle, the results may be sad indeed. And in the present desperation to obtain fatty oils of any kind or grade, this could happen. Small soapers who buy any oils — and especially so-called recovered oils—from unknown sources had best know what they are getting before it goes into the kettle.

TIGHT as a fiddle string—that describes the glycerine situation today. At the ceiling price of eighteen cents for C. P. glycerine, users find adequate supplies impossible to obtain. At twice this price and higher, there are somewhat larger quantities to be had in the black market, but even these are far from plentiful.

Thus far this year, imports of glycerine have been heavy. Something over twelve million pounds came in during the first quarter. At the beginning, Australia and Britain were shippers to America, and later supplies from the Argentine, and even India, Egypt and the West Indies have come in. Actually, American importers have scoured the producing areas of the world for stocks, but with the present fat and oil scarcity worldwide, they have had to go far afield to obtain shipments. For this imported material, the price has scaled upward gradually until now it approximates seventy cents per pound on a C. P. basis. Predictions have been heard that the equivalent of a dollar market for C. P. glycerine is a possibility in the near future.

Glycerine is illustrative of the screwy effects which come from a mixed economy, half free and half regulated by law. American users are permitted by OPA to purchase glycerine on a basis of seventy cents—provided they do not increase the price of the finished materials into which this glycerine goes—but cannot buy domestic black market glycerine at forty or fifty cents. At the present time, the ceiling of eighteen cents for C. P. actually is meaningless, marketwise. Those refiners who are delivering to regular customers are pricing their glycerine at this figure under the compulsion of law and not from choice or on a basis of present costs. Practically every consumer of glycerine would be only too glad to pay double or more the present ceiling price for that glycerine now finding its way into the black market—but is forbidden to do so. Truly, it is a ludicrous situation—and one more explanation why so many business men are out to scalp the OPA.

MODIFIED ROSINS...

their possibilities in soap manufacture

By J. N. Borglin*
Hercules Powder Company

ROSIN, which is composed of about 90 per cent of resin acids and 10 per cent of nonacids, is the most economical, high-molecular-weight, organic acid available in dependably large quantity. The rosin acids are doubly unsaturated and, consequently undergo oxidation. This unsaturation is desirable for many uses. For other uses, it is necessary to decrease the unsaturation, thereby increasing the resistance to oxidation. This is accomplished through modification by hydrogenation, dehydrogenation (disproportionation), or polymerization.

Ordinary gum and wood rosin are used extensively in yellow bar laundry soap, wherein they serve to maintain detergency, sudsing, and favorable rate of solubility. The color imparted normally limits use of rosin to the darker colored soaps, however. For years the public has been educated to associate light color of soap with purity. Notwithstanding this, there are numerous high-grade toilet soaps on the market which are not white in color, yet meet with gratifying trade acceptance.

Modified rosins such as the hydrogenated ("Staybelite") and dehydrogenated (disproportionated) types are extremely light in color and are resistant to oxidation. This is also true of their soaps. Typical analyses of two modified rosins are given in Table 1 in comparison with regular rosin.

The oxidation resistance of the modified rosins (1) is due to the high percentage of dihydro- and tetrahydroabietic acids in hydrogenated rosin, the dihydro-, tetrahydro-, and dehydroabietic acids in disproportionated rosins, and the correspondingly low percentage of abietic-type acids. Therefore, soaps containing modified rosins do not darken in color to any appreciably greater extent, when not more than about 10 per cent of modified rosin is present, than is normal for soaps made from the same fats without any modified rosins.

The addition of rosin or modified rosins to tallow soap does not decrease the amount or stability of the lather using the apparatus described by Ross and Miles (2). Modified rosins are slightly superior to regular rosin in this respect as shown in Table 2.

The greater solubility of dehydrogenated (disproportionated) rosin soap should be of special interest for manufacture of liquid soap products since a 20 per cent solution of it has been found to be stable at room temperature. These solutions are unexpectedly limpid, free-flowing liquids.

It has been demonstrated that hydrogenated rosin when used in soap manufacture serves to maintain the detergency of tallow soaps over the range of concentrations at which hydrogenated rosin is normally used. This fact is illustrated by the data plotted in Figure 1. The data also demonstrate that the hydrogenated rosin functions as a true detergent and not as a builder. The area below Curve 1 in Figure 1 represents the work performed by the tallow soap, and the area between Curves 1 and 2 represents the work performed by the hydrogenated rosin soap.

When dehydrogenated (disproportionated) rosin soap is similarly evaluated, it is found to give substantially the same results to those obtained with hydrogenated rosin soap. Because of this and results discussed below, these two modified rosins are considered interchangeable for use in soap manufacture.

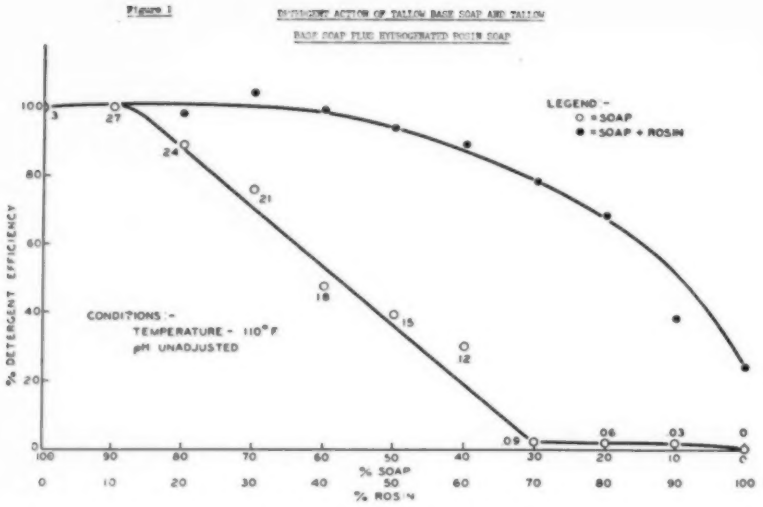
The improved wetting action as determined by the Draves test, obtained by the use of hydrogenated rosin was recently reported (3). This and more recent work demonstrate that while tallow soap possesses better wetting action per se than hydrogenated or dehydrogenated (disproportionated) rosin soap, combination of tallow with hydrogenated or dehydrogenated (dis-

TABLE 1
Typical Analysis of Rosins

	Type of Rosin		
	Regular WG Wood	*Hydrogenated**	*(Disproportionated Dehydrogenated)†*
Acid Number	166	162	160
Saponification Number	172	167	170
Unsaponifiable Matter	6.0%	9.0%	8.0%
Softening Point (Hercules Drop Method)	181°F.	168°F.	177°F.
Abietic-Type Acid Content	53%	3%	Nil
Density	1.067	1.045	1.070
Color—U. S. Rosin Standard	WG	X+	X+
Oxygen Absorption in 170 Hours at 300 p.s.i. oxygen pressure and 25°C.	10.5%	Nil	0.06%

* Staybelite Grade † Resin 731 Grade

* Experimental work dealing with sudsing, wetting-out action and detergency was carried out by B. S. Van Zile.



proportioned) rosin soaps seems to have a synergistic effect in enhancing the wetting action. Dehydrogenated (disproportionated) rosin soap is even more effective in enhancing the wetting action of tallow soap than is hydrogenated rosin soap. Contrariwise, coconut oil soap under similar conditions detracts from the wetting action, functioning largely as an inert. This is demonstrated by Figure 2.

In the case of hydrogenated rosin soap, the data show that 0.75 grams of tallow soap per liter of water gives a wetting-out time of 40 seconds. When 10 per cent of the tallow soap is replaced by hydrogenated rosin soap, only 0.52 grams per liter are required to give the same wetting-out time. Under identical conditions, the substitution of 10 per cent of tallow soap by coconut oil soap required 1.25 grams per liter to give the same wetting-out time.

Figure 3 shows the relative enhancing action of hydrogenated and dehydrogenated (disproportionated) rosin soaps on the wetting speed of tallow base soap. Both modified rosins are effective in this respect and compare favorably. For instance, as little as 10 per cent of either modified rosin when added to tallow base soap increases the wetting speed by about 30 per cent. When 20 per cent of the tallow base soap is replaced, the wetting speed is increased by about 50 per cent.

The favorable effect of modified rosin soaps on the wetting action of tallow-base soaps and their marked superiority over coconut oil soap should be of intrinsic value for household and industrial uses such as laundry, textile, disinfectants, etc.

IT has long been known that soap solutions have germicidal action (4, 5). Soaps of regular rosin (6, 7, 8) have been reported to possess greater germicidal action than soaps of the common fatty acids. This has been confirmed by others (9, 10) who also showed that soaps of dihydro- and tetrahydro-abietic acids are more effective than abietic acid soaps, demonstrating that saturation contributed to this desirable property.

To determine whether the foregoing would be true in the case of a commercially hydrogenated rosin, bacteriostatic and bactericidal tests (11) were made with tallow base floating soap and also the same soap containing

TABLE 2

Lather Stability of Soaps Containing 25% Rosin or Modified Rosin, 36% Moisture Basis, Temperature 120° F.

	Height of Lather in mm.			
	*In Soft Water**		*In Hard Water†*	
	Immediate	*After 15 Min.*	*Immediate*	*After 15 Min.*
Tallow Soap, No Rosin (Control)	200	210	200	185
N Wood Rosin	225	220	210	200
Hydrogenated Rosin	235	235	220	215
Dehydrogenated (Disproportionated) Rosin	230	225	225	215

* Soft Water: 50 p.p.m. $CaCO_3$; Soap Concentration, 0.25%
† Hard Water: 300 p.p.m. $CaCO_3$; Soap Concentration, 0.50%
} Calculated on basis of soaps containing 36% water.

TABLE 3

Bacteriostatic Action of Soaps Against Staphylococcus Aureus

Soap Tested	*Dilution*	*Zone of Inhibited Action*
Tallow Soap	Undiluted	0 mm.
Tallow Soap	10%	0 mm.
Tallow Soap	5	0 mm.
Tallow Soap	2	0 mm.
Tallow Soap	1	0 mm.
Tallow Soap containing 5% Hydrogenated Rosin	Undiluted	9 mm.
Tallow Soap containing 5% Hydrogenated Rosin	10%	9 mm.
Tallow Soap containing 5% Hydrogenated Rosin	5	5 mm.
Tallow Soap containing 5% Hydrogenated Rosin	2	3 mm.
Tallow Soap containing 5% Hydrogenated Rosin	1	1 mm.
Tallow Soap containing 10% Hydrogenated Rosin	Undiluted	6 mm.
Tallow Soap containing 10% Hydrogenated Rosin	10%	5 mm.
Tallow Soap containing 10% Hydrogenated Rosin	5	4 mm.
Tallow Soap containing 10% Hydrogenated Rosin	2	3 mm.
Tallow Soap containing 10% Hydrogenated Rosin	1	1 mm.
Tallow Soap containing 20% Hydrogenated Rosin	Undiluted	6 mm.
Tallow Soap containing 20% Hydrogenated Rosin	10%	6 mm.
Tallow Soap containing 20% Hydrogenated Rosin	5	4 mm.
Tallow Soap containing 20% Hydrogenated Rosin	2	3 mm.
Tallow Soap containing 20% Hydrogenated Rosin	1	2 mm.
Neutral Hydrogenated Soap	6%	8 mm.
Neutral Hydrogenated Soap	2	4.5 mm.
Neutral Hydrogenated Soap	1	2.5 mm.
Alcoholic Tincture of Green Soap	65%	0 mm.
Alcoholic Tincture of Green Soap	2	0 mm.
Alcoholic Tincture of Green Soap	1	0 mm.

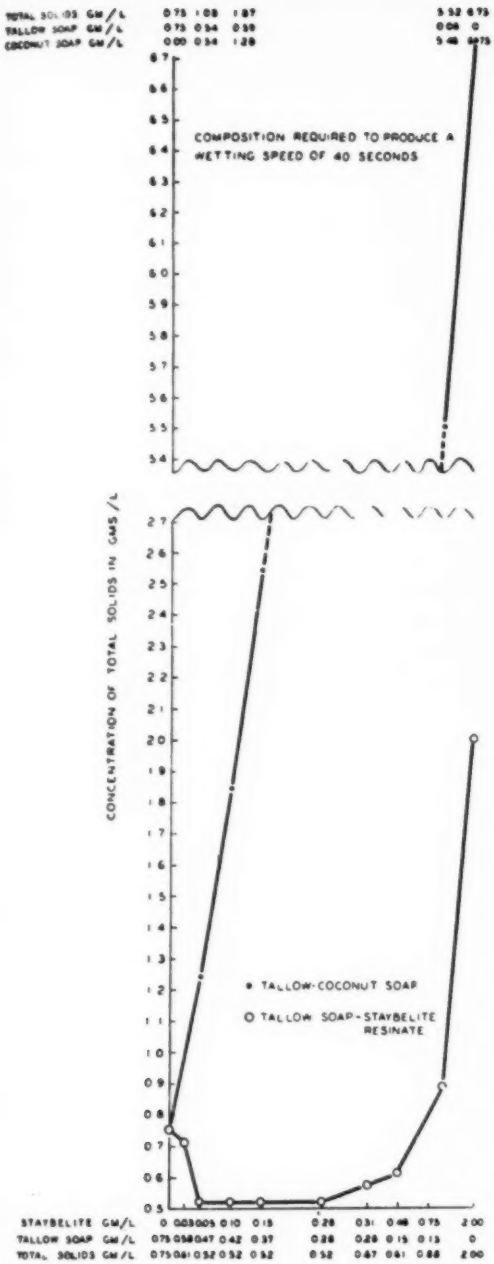

COMPOSITION REQUIRED TO PRODUCE A WETTING SPEED OF 40 SECONDS
CONCENTRATION OF TOTAL SOLIDS IN GMS /L
• TALLOW-COCONUT SOAP
O TALLOW SOAP-STAYBELITE RESINATE

Figure 2.—The effect of sodium resinate of hydrogenated rosin (staybelite) sodium coconut oil soap on the wetting speed of sodium tallow soap at 40° C. in distilled water.

5, 10, and 20 per cent of hydrogenated rosin soap. The method used for determining the bacteriostatic and bactericidal action was the Food and Drug Administration's Agar Cup and Plate Method (12). The test organism was an F.D.A. strain of *Staphylococcus aureus*.

It is seen from these data that the hydrogenated rosin soap and soaps containing hydrogenated rosin were bacteriostatic for *Staphylococcus aureus*. All of the cultures which showed a zone of inhibited action were subcultured by taking a loopful of the agar from the inhibited zone adjacent to the area of growth and inoculating this into a tube of nutrient broth and incubating at 37.5°C. for 48 hours. The hydrogenated rosin soap and the soaps containing hydrogenated rosin showed no growth in these tests and, therefore, possesses germicidal action against *Staphylococcus aureus*.

It can be further concluded that the action of hydrogenated rosin soap is quite definite and may be classified as bacteriostatic and bactericidal under the conditions of the test and bacteria used. Although alcoholic tincture of green soap is widely used as a germicidal soap for terminal disinfection and for scrubbing of wounds, it exhibits neither bacteriostatic nor bactericidal action in these tests. The results indicate that hydrogenated rosin soaps are superior to alcoholic tincture of green soap from the standpoint of bacteriostatic or bactericidal activity.

TO determine whether soaps which contained regular, hydrogenated, or dehydrogenated (disproportionated) rosin soaps would be primary irritants or skin sensitizers, patch tests were conducted (13). This data is summarized in Table 4.

In this table, Column *A* gives the concentration at which the test soap was used; *B* is the number of men and women out of a total of 200 (100 men and 100 women) who did not react; *C* gives the percentage of reactions after five days exposure. Three weeks after the first patches were removed, each soap was retested on the same individual. *D* gives the per cent reactions on second exposure after two days on the same area as used in *C*.

These results show that high or low concentration of rosin or modified rosins in soap have no skin sensitizing action. The use of even low percentages of rosin soap seem to reduce irritation of the skin by the soap.

Since the tests used were intentionally drastic to bring out any differences, the results are not a condemnation of the commercial toilet soaps. The conclusion of the investigators (13) is "that all the rosin soaps tested above compare favorably with commercial brands of soap available on the open market and were found to be less irritating than the commercial brands of soap." . . . "We feel there is no danger either of primary irritant or skin sensitization reactions from these substances."

Conclusions

Modified rosins offer several advantages for use in soap prod-

TABLE 4

Primary Irritant and Skin Sensitivity Patch Tests With Soaps

Soap Compositions	A Concentration of test soap	B Neither	C Application 1st	D Application 2nd
1. Hydrogenated Rosin 30% + Tallow 70%	1%	198	1.0%	0.0%
Hydrogenated Rosin 30% + Tallow 70%	100	157	16.5	10.0
2. Commercial Toilet Soap No. 9 (No Rosin)	1	195	16.5	0.5
Commercial Toilet Soap No. 9 (No Rosin)	100	98	35.0	36.5
3. Commercial Toilet Soap No. 21 (No Rosin)	1	118	6.0	6.0
Commercial Toilet Soap No. 21 (No Rosin)	100	45	58.0	78.0
4. Commercial Laundry Soap Containing Rosin and Builder	1	200	0.0	0.0
Commercial Laundry Soap Containing Rosin and Builder	100	118	22.0	34.5
5. Commercial Toilet Soap Containing 2% Hydrogenated Rosin	1	200	0.0	0.0
Commercial Toilet Soap Containing 2% Hydrogenated Rosin	100	148	14.5	21.5
6. Commercial Toilet Soap Containing no Hydrogenated Rosin	1	200	0.0	0.0
Commercial Toilet Soap Containing no Hydrogenated Rosin	100	135	12.5	27.5
7. Dehydrogenated (disproportionated) Rosin 30% + Tallow 70%	1	200	0.0	0.0
Dehydrogenated (disproportionated) Rosin 30% + Tallow 70%	100	155	11.5	19.0

ucts. Since soaps are used for cleansing the human body, clothes, homes, etc., the desirable properties imparted by modified rosins are of intrinsic value to the soap users and, therefore, to the manufacturer. The advantages to be gained by the use of modified rosins are:

1. Enhanced wetting action of tallow-base soaps. (Coconut oil soap detracts from the wetting action.)

Modified rosin seems to impart bacteriostatic and bactericidal action not possessed by tallow-base soaps.

3. Reduced skin irritation under conditions of the tests.

4. No decrease in detergent or sudsing action.

5. Decreased dust in spray-dried soaps.

6. Modified rosins, unlike ordinary gum and wood rosin, can be used in light-colored toilet, laundry, flake, and spray-dried soap with no material increase in color, when used in amounts allowed by present specifications (14).

7. Dehydrogenated (disproportionated) rosin soap solutions are of low viscosity and, therefore, indicated for use in liquid soap preparations.

8. In limited amounts, they are suitable replacements for coconut oil or tallow, thus increasing the available supply of soap making raw materials and simultaneously imparting desirable properties not characteristic of tallow or coconut oil soaps. Indications are that these desirable properties are also imparted to soaps prepared when using these resins with other soap stocks.

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(10 W. D. Pohle and L. S. Stuart, Oil & Soap, *18*, No. 1, *2-7* (January, 1941).

(11) Private Communication from Dr. H. A. Schelanski of Smyth Laboratories, Philadelphia, Pennsylvania.

(12) Department of Agriculture Bulletin No. 198.

(13) Private Communication Dr. H. A. Schelanski of Smyth Laboratories in cooperation with Dr. J. V. Klauder, Philadelphia, Pennsylvania.

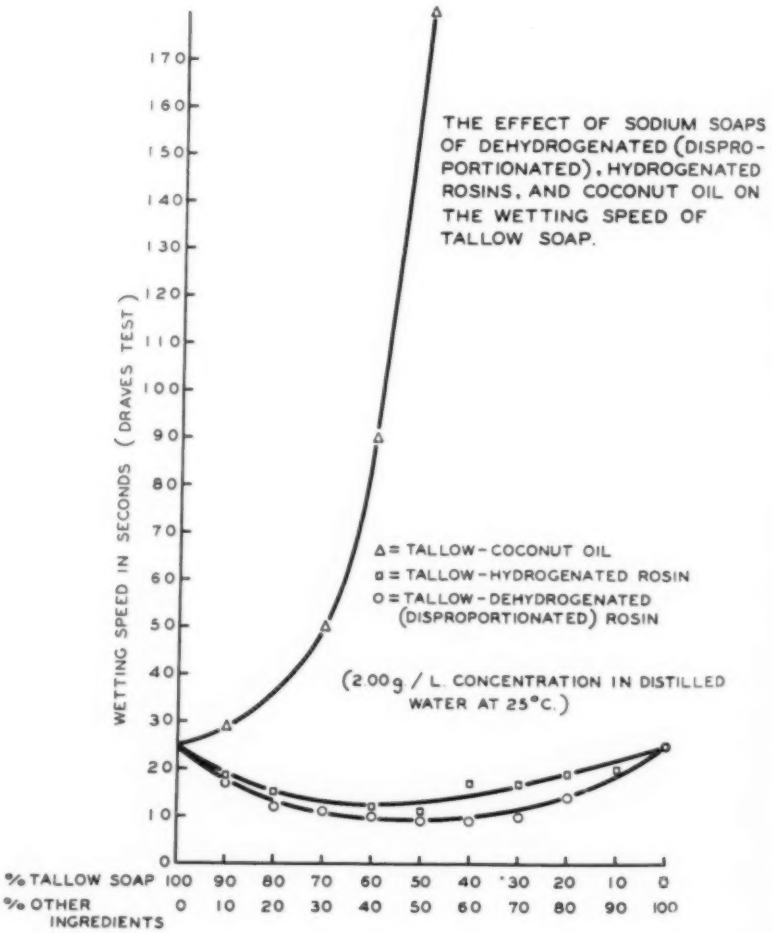
(14) A.S.T.M. Specifications—D-496-39 (Chip Soap).

D-533-44 (Powdered Soap).

D-455-39 (Milled Toilet Soap).

D-499-39 (White Floating Soap).

Figure 3


THE EFFECT OF SODIUM SOAPS OF DEHYDROGENATED (DISPROPORTIONATED), HYDROGENATED ROSINS, AND COCONUT OIL ON THE WETTING SPEED OF TALLOW SOAP.
WETTING SPEED IN SECONDS (DRAVES TEST)
Δ = TALLOW - COCONUT OIL
□ = TALLOW - HYDROGENATED ROSIN
○ = TALLOW - DEHYDROGENATED (DISPROPORTIONATED) ROSIN
(2.00g / L. CONCENTRATION IN DISTILLED WATER AT 25°C.)
% TALLOW SOAP 100 90 80 70 60 50 40 30 20 10 0
% OTHER INGREDIENTS 0 10 20 30 40 50 60 70 80 90 100

Paul H. Douglas

Herman L. Brooks

T.G.A. Meets, Elects Paul Douglas

Toilet preparations manufacturers hear discussion of raw material and container shortages . . . review of legislative outlook . . . outline of association program . . . merchandising forum and technical papers

THE tenth annual meeting of the Toilet Goods Association, held at the Waldorf-Astoria, New York, May 15, 16 and 17, closed with the election of Paul H. Douglas of Bourjois, Inc., as president of the association, succeeding Herman L. Brooks who retired after ten years as chief executive of the association. Mr. Brooks, who retired recently as president of Coty, Inc., but who it is understood will remain in the industry, was elected honorary chairman of the association's board of directors.

The following were elected as vice-presidents of the association: William H. Bristol, Jr., Bristol-Myers Co., H. P. Willats, Colonial Dames, Inc., Norman H. Dahl, Prince Matchabelli, Inc., and John A. Ewald, Allied Products, Inc. Paul F. Valee of Roger & Gallet continues as treasurer and Joseph Keho, Dorothy Gray, Ltd., as secretary. S. L. Mayham is executive vice-president of the association.

The three day meeting included a raw material and container symposium the first morning, reports of officers the afternoon of the same day, a symposium on merchandising and a closed business session the second day, with the third and final day given over to a meeting of the scientific section.

Sees End to Oil Shortage

The first speaker of the morning session, May 15, was N. N. Dalton of the Association of American Soap & Glycerine Producers, Inc., who took as his subject, "Fats and Oils." The fat and oil potential is always greater than the demand, Mr. Dalton pointed out. He explained that the problem is to bring fats and oils to where they are needed. After reviewing what had happened to several of the various large oil producing regions early in the war, Mr. Dalton declared that there is no reason for an extended shortage of fats and oils because things are growing all the time and thus furnishing us with oil bearing materials.

Citing the price drop in lard after the last war as an illustration of what happens in a free uncontrolled market, Mr. Dalton stated that the fats and oils shortage should improve rapidly under those conditions. In two years, he said, the oils and fats shortage will be a thing of the past. There will be no surplus by then, but the situation should be fairly normal by 1947, he declared. He pointed to the fairly regular increases in the amount of copra that is coming into the United States as a good sign.

Europe is the focal point of disturbance in today's fats and oils situation, Mr. Dalton indicated. Normally Europe imports five billion pounds of fats and oils annually, plus millions of pounds of oilseed cakes. However, her principal pre-war sources of supply: India, China, Dutch East Indies, Manchuria, South America, etc., are unable to produce normal quantities of fats and oils because of war damage. On the other hand, the speaker declared it is difficult to understand how we were able to ship billions of pounds of fats and oils to Europe under Lend-Lease, and are now finding it hard to send the estimated needs of 750 million pounds. Further confusion arises from the fact that the proposed 20 per cent cut in fat and oil use in the U. S. would make available about two billion pounds of fats and oils for Europe as compared with the 750 million pounds

which it is estimated are needed from us for Europe. Our production of fats and oils was increased by three billion pounds during the war, he stated.

As an illustration of the waste and destruction of fats and oils and production facilities that take place during war, Mr. Dalton told how the Japs had run a pipeline from one of the largest coconut plantations in the Philippines to a public utility for the purpose of burning coconut oil to supply power. Similarly, in the Philippines vast destruction was wrought on crushing plants, plantations and the paraphernalia essential to gathering copra. However, in spite of labor, transportation and other difficulties in the Philippines, the use of such army equipment as trucks and landing craft is aiding greatly in the increasing production and export of copra and coconut oil from the Islands.

Strikes Cripple Container Industry

Continuing the symposium on current shortages, John T. Ogden, publisher of the *Glass Packer* magazine, reported that glass container production has doubled since the war. However, the coal strike has crippled the industry. Glass container production reached an all-time high in the first quarter of 1946, although because of the great demand and the increased use of glass for food packages the supply is still not plentiful. The outlook for the balance of the year will be affected by the shortage of soda ash, the tightness in the supply of molds and possible labor shortages. Mr. Ogden then discussed the possible results of the repeal of L-103, the glass container order, for which some groups are said to be pleading. For one thing it was pointed out, the lifting of restrictions on the manufacture of glass containers would mean the rescinding of the ban on changes in design. This would, in effect, close down the industry while new molds were designed.

The collapsible tube situation was reported by the next speaker, Lester B. Pratt of the Collapsible Tube Manufacturers Association. Tin and lead restrictions are still severe, he reported. Lead was free until the beginning of 1945, while tin has been restricted since the beginning of the war. M-115, the collapsible tube order, was rescinded Dec. 1, 1945. However, this only eliminated some of the paper work, since tin and lead controls still remain. However, aluminum restrictions have been lifted and its use is now allowed. Although the amount of aluminum used for collapsible tubes has been only ten per cent of the amount of tin and lead used, it is expected that this percentage may increase with continued restrictions on the other two metals. The industry is refusing to export collapsible tubes as long as there is such a large demand for them in the United States, the speaker asserted. It is estimated the tin supply will be improved in another year. During the war two million pounds of tin and three million pounds of lead were salvaged through the "tube-for-a-tube" turn-in plan, the speaker stated. These metals were then returned to high priority uses. Of all collapsible tubes produced, 12 per cent are used for shaving cream and 46½ per cent for dentifrices, according to Mr. Platt.

The metal shortages today are serious and will continue with few exceptions through 1947, Arthur P. Hickcox of Scovill Manufacturing Co., the next and final speaker of the symposium reported.

Miss Halo Chadwick, manager of the Brooklyn Industrial Office, United States Employment Service, reported that more than 520,000 job seekers have registered with the U.S.E.S. offices. Veterans comprised 250,000 of the number of persons seeking employment. Miss Chadwick urged that employers list with U.S.E.S. a more representative cross-section of jobs available, especially higher grade jobs.

THE next feature of the program was a round table discussion of essential oils and aromatic chemicals. Stephen L. Mayham, executive vice-president of the Toilet Goods Association, presided and Joseph A. Huisking, Fritzsche Bros., Inc.; Val Fisher, Dodge & Olcott, Inc., who replaced Francis T. Dodge of the same firm who was unable to participate because of illness; R. M. Stevenson, Givaudan-Delawanna, Inc. and L. Van Ameringen, Van Ameringen-Haebler, Inc., were the discussion leaders. Mr. Huisking and Mr. Fisher covered essential oils, while Mr. Stevenson and Mr. Van Ameringen took up the subject of aromatic chemicals. Their observations are reported fully elsewhere in this issue. (See page 50.)

Essential Oil Outlook Discouraging

In discussing the European and North American essential oil situation, Mr. Huisking pointed out that French essential oil picture is not too hopeful. French oils will continue to be scarce and consequently high in price, he predicted. Most of the older plantations that produced jasmine, rose and tuberose were discontinued during the war and operated as vegetable gardens. Many will continue to be operated for food raising purposes, Mr. Huisking stated. Producing areas had bad weather in December, but favorable growing weather in January and February, he stated. France is suffering from a lack of fertilizer and a shortage of labor. Hopes that quantities of absolutes were hidden away during the German occupation have not been realized. Another factor militating against American imports of French oils is the large scale resumption of operations by French perfume factories, which are demanding increasing quantities of French essential oils. Increased production of essential oil in North Africa seems to be the key to our solution of the European essential oil situation.

In discussing the essential oil situation in the Western Hemisphere, Mr. Huisking pointed out that production of lemongrass and citronella oils is increasing to the point where it may be possible for the U. S. to be independent of other world sources for these two products in the near future. Jamaica has not produced much in the essential oil field, the speaker stated. Haiti has a few individuals producing petitgrain, but it is not as good as the French product. Vetiver, lemongrass and citronella are also being produced, which means that Haiti has a chance of becoming a good essential oil source.

In Puerto Rico, a U. S. Department of Agriculture experimental station continues its experimental work. In the Dominican Republic, lime and

bay oils are being produced. Mexico gives promise of becoming an excellent source of essential oils, and although educational work is needed for the peasants, lime and linalol and many other valuable essential oils are produced there. Guatemala is another Latin American country that offers good possibilities for essential oil production. Both lemongrass and citronella are raised there in appreciable quantities. This is also true of Honduras and Chile.

Another country mentioned as a great potential essential oil producer is Argentina. At the present time most of that country's essential oils are absorbed by the domestic market. Eucalyptus is one of its best essential oil offerings. The Brazilian crop of flowers for essential oils suffered as a result of the recession that country experienced recently, following its war-time boom. Growers were skeptical and reduced their plantings of sassafras, bois de rose, vetiver, lemongrass, orange, etc. The Brazilian vetiver and lemongrass are used locally. In Paraguay, a source of petitgrain, efforts are being made to plant patchouli and other soap perfuming oils.

Reporting on the essential oil situation in the rest of the world, Val Fisher stated that from some sections of the world reports are infrequent and not considered reliable. He said that damage caused by the Japs to essential oil plantations in the Far East was severe and that it would take several years before oils are in good supply again. The situation is not comparable to that which existed after the first world war. In World War II we were cut off from the citronella and camphor oils industries. As a result, there will be shortages for a year or two. These industries must be completely rebuilt. The soap manufacturer will feel the effects of these conditions keenly because of the narrow price margin on perfuming materials.

During the war the British took possession of the Bourbon Islands and the United States was the only available market. After V-E day, however, Europe opened up as a market and prices rose under competitive bidding, while production could not be increased. Patchouli is available from Seychelles, but production is small. Production of lemongrass, citral and hydroxycitronellal in India is increasing but still is not sufficient to meet demand. The situation in the Dutch East Indies is not clear. After V-E Day it was thought some materials would come through, but these have failed to materialize. It is now believed that hidden supplies were small and that plantations were very badly injured. It will, therefore, be some time before vetiver, which requires three years to produce, and citronella, which requires large acreage, are available in anything like normal quantities. The Japs destroyed all the plantations in Singapore, source of patchouli, and so it will be a long time before that oil is available once more. China is in fair shape. In the Philippines we have been cut off from our source of ylang ylang. Formosa is a question mark. Its oil is badly needed, but it is now feared it will be a long time before it will be available.

Reports of Association Officers

IN his annual report the retiring president, Herman L. Brooks, noted a sharp increase in association membership since the last meeting two years ago, a jump from 386 to the present total of 514 members. He also reported a sharp increase in the output of the industry, the value of whose products he reported has advanced by $259,000,000 since 1940.

Mr. Brooks referred briefly to the recent reports that government officials are considering a change in the present retail excise tax on cosmetics and toilet preparations to a manufacturers' tax. Latest reports from Washington, he said, would seem to indicate that there is no immediate prospect of such a change. He reminded that the present excise tax will remain in effect for a considerable time unless revoked by specific Congressional action. Failing such action, it will remain in effect at present rates until six months after the war is officially terminated, when the rate would automatically be restored to the pre-war level of 10 per cent.

Among the recommendations included in Mr. Brooks' report was one that the program committee consider adding an exhibit by suppliers at next year's annual meeting. The suggestion was also advanced that a one-day meeting might be held this fall. Mr. Brooks also recommended to the board that it consider formation of a Toilet Goods Exhibit which could be sent from city to city, accompanied by a lecturer. The exhibit would portray the sources and composition of the industry's products.

S. L. Mayham, executive vice-president, in his report advanced the suggestion that the association make some arrangements for the collection of statistical information dealing with production and sales of industry products. He also suggested that all members of the association particularly interested in the export market for cosmetics might hold a preliminary meeting to determine whether or not a series of such meetings at regular intervals might not be helpful. He recommended further that the association consider the possibility of doing market research in the cosmetic field. Consideration was also suggested by Mr. Mayham to the possibility of the association engaging in an educational and public relations campaign.

Legislative trends and developments, as they affect the industry, were analyzed in the report of Hugo Mock, TGA counsel. Though the court is still considering numerous cases arising out of the Robinson-Patman Act, and the final decisions have not yet been handed down, it seems quite clear, said Mr. Mock, that the trend "is toward eliminating favors for favored customers and against any special consideration for large distributors." He reported that "the principle of price maintenance is in better odor in Washington, even in the Justice Department," reporting that "it has come to be recognized that fair trade retail prices are not an instrument of monopoly but are of great advantage to the small retailer and also to the manufacturer in preserving good-will."

A more logical and common sense point of view seems to be permeating the Federal Trade Commission in its recent official actions, reported Mr. Mock, possibly prompted by the in-

(*Turn to Page* 173)

AROMATIC CHEMICALS...

By A. L. van Ameringen
van Ameringen-Haebler, Inc.

OPENING remarks by Mr. Stevenson in the discussion on aromatic chemicals: "Mr. van Ameringen, you made a report at the outbreak of the war on aromatic chemicals. In the light of what has happened since, you undoubtedly have some comments to make."

Mr. van Ameringen: "At the annual meeting of the Toilet Goods Association in June, 1941, I reported on aromatic chemicals. Many of those present had been in business during the first world war and I compared the basic situation during the first war with that which was faced in 1941.

"Prospects were far better because a strong chemical industry had been developed in the United States and we, therefore, were no longer dependent on imported aromatic chemicals. I mentioned that the research work done during the past 20 years would be of the greatest assistance to users of aromatic chemicals. I felt sure that prices of aromatic chemicals, with the exception of those derived from essential oils, would be fairly stable, quite a difference from the experience of the first world war when those aromatic chemicals increased from 500 to 2,000%. Our customers as well as we would have to face many problems which could not be predicted at that time.

"None of us knew what restrictions would be put on our raw materials or what part of our production would be called on for the war effort. I felt, however, that with close cooperation between the user of perfuming materials and the manufacturer of aromatic chemicals the supply could be maintained on a fairly adequate basis. I warned against hoarding, and stressed the importance, as far as your chemists were concerned, of trying to prepare for as many different solutions of their problems as possible, as undoubtedly they would find themselves in a situation where a change in their manufacturing process which they had planned would become impossible and they would have to make some other change necessitated by existing conditions. I felt confident, however, that as far as perfume raw materials were concerned our industry would be able to keep the toilet goods manufacturers supplied in a satisfactory manner. All of the above were predictions."

Mr. van Ameringen: "Mr. Stevenson, what is your opinion of what the aromatic chemical manufacturer has done during the war years?"

Mr. Stevenson: "All of us know that during the war years, in spite of our best efforts, we were never able to produce enough of our materials to satisfy the demand. Practically all of the chemical intermediates were under allocation and in the early stages our industry was not given much consideration. We were classified as being in the definitely non-essential category. Why should scarce materials be allocated to make perfumes and cosmetics, was the WPB attitude. It required many visits to Washington, aided by the splendid work of the toilet goods industry in stressing the morale factor in the use of cosmetics, before they started to loosen up. Some raw materials were completely unavailable. We couldn't get meta cresol so we couldn't make musk ambrette. Aluminum chloride was required in tremendous quantities to make high octane gasoline and synthetic rubber, so our production of phenyl ethyl alcohol, benzophenone, etc. suffered accordingly. We were always short of bichromate of soda and that resulted in a curtailment of the manufacture of aubepine and heliotropine. Wherever possible we used substitute raw materials, but that could be carried only so far.

"Like every one else we were short of labor both for production and maintenance. Our apparatus took a terrible beating. We couldn't shut down for repairs unless forced to by a complete breakdown. Nothing could be replaced. It simply had to be patched up.

"On top of the accelerated demand for normal uses, we were called upon by Washington for very large quantities of some of our products for direct war purposes. Benzyl benzoate is a good example. We were required to supply quantities which were fantastic as compared with normal production. This not only tied up our productive facilities, it utilized all the benzyl chloride available and shut off the manufacture of benzyl acetate, benzyl alcohol and the other benzyl esters. Also, since our apparatus is

The supply and price[illegible] during and after the w[illegible] discussed at the recen[illegible]

and R. M. Stevenson
Givaudan-Delawanna, Inc.

adapted to the manufacture of other chemicals, we were required to produce certain materials essential to the prosecution of the war and that tied up facilities and labor which could otherwise have been used to produce our regular items. That was our contribution to the war effort.

"In addition we had to fill the gap caused by the shortage of certain imported essential oils such as geranium bourbon, bergamot and lavender. We made such acceptable artificial oils that it is believed their use will carry through even when import conditions improve. This ran into quite heavy volume and required large quantities of aromatics."

Mr. Stevenson: "Mr. van Ameringen, was your prediction regarding prices during the war justified?"

Mr. van Ameringen: "To answer your question intelligently, it is necessary to differentiate between those aromatic chemicals which are produced by synthesis and those where essential oils are used as the raw material.

"I am happy to say that the selling prices of aromatic chemicals produced by synthesis, such as benzyl acetate, phenyl ethyl alcohol, amyl salicylate, benzyl benzoate, phenyl acetic aldehyde, musk xylol and hundreds of other products coming in that class, showed no appreciable increases over the 1939 prices. As a matter of fact, I do not believe that those increases on the average were over 10 per cent. At times the supply of those products was insufficient to meet the demand and may have caused occasional black markets, but certainly aromatics manufacturers in general took no part in this practice and did not use war time difficulties or war time scarcities as an excuse for unwarranted price increases —quite a different situation from the one which existed in the 1914-1918 period.

"The aromatic chemicals where essential oils serve as the raw materials created a different situation. Four essential oils, namely: Java citronella, bois de rose oil, geranium oil and lemongrass oil, are by far the most important as raw materials for our industry. Geraniol, citronellal, rhodinol, linalool and citral are isolated from those oils by careful vacuum distillation. If necessary further purification methods make it possible to end up with 100 per cent pure chemical bodies.

"The citronellal obtained from Java citronella is the starting point for the production of synthetic menthol, hydroxycitronellal and citronellol; while the citral obtained from lemongrass is the starting point in the production of the ionones. You all know what happened to the prices of those four essential oils when war conditions made their import either impossible or restricted it greatly. Java citronella rose from 30c to $4.50 a lb.; bois de rose oil, from $1.30 to $5.50 a lb.; geranium oil, from $3.00 to $26.00 a lb., and lemongrass, from 50c to $4.20 a lb. It is unnecessary to say that the isolates obtained from those essential oils had to increase accordingly. This condition was completely beyond the control of the aromatic chemical manufacturers."

Mr. van Ameringen: "This is what happened to prices during the war. What do you think will happen to prices of aromatic chemicals in the future?"

Mr. Stevenson: "As long as OPA price restrictions continue, that question is somewhat academic. However, judging from the long-range standpoint, there must be some increased prices. In the last analysis, increased labor costs are bound to have an effect all along the line. That applies to chemical intermediates, our own productive and maintenance labor, administration costs, containers, power, etc.

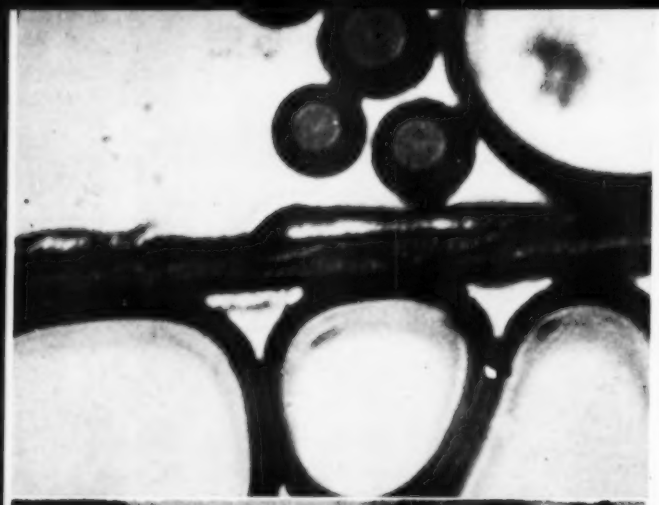
"It is freely predicted that freight rates will increase before the year end. If and when the coal strike is settled, the price of coal will be advanced substantially. All factors point in only one direction, but I do not expect a runaway situation. There is a little item known as competition which has quite a regulatory effect."

Mr. Stevenson: "I have, of course, referred only to the pure synthetics. In connection with the isolates, what in your opinion will be the effect of continued exhorbitant prices of imported essential oils?"

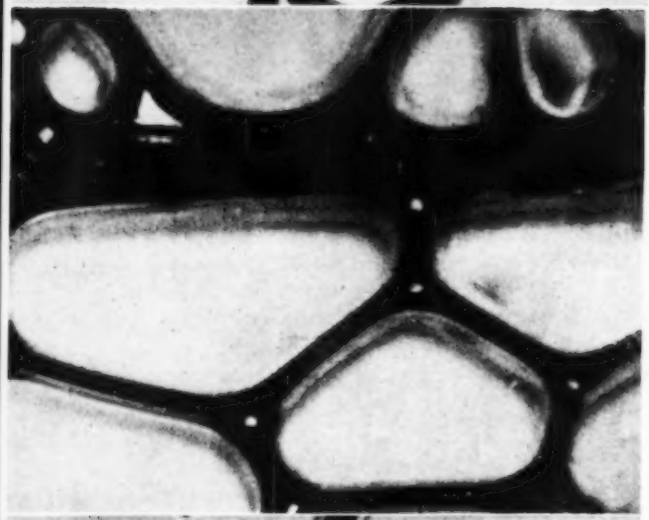
Mr. van Ameringn: "Although our industry separates certain aromatic

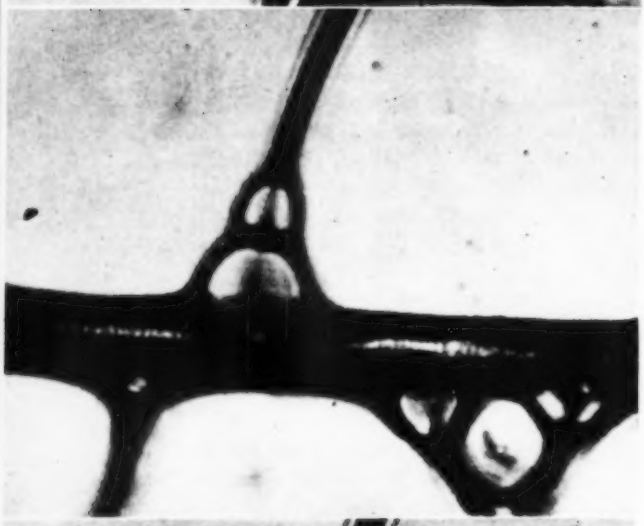
(*Continued on Page* 175)

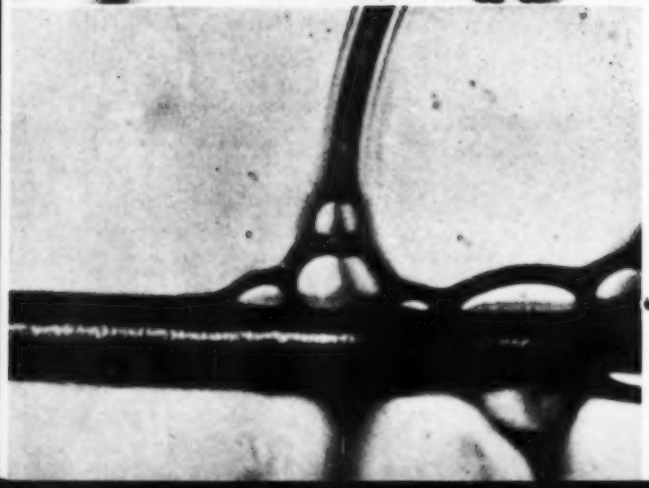
* Part of a raw material symposium before the Toilet Goods Assn., New York, May 15, 1946.



Above—Half-head technique of shampooing. One half of head shampooed with soap shampoo, other half with "Drene" in the P. & G. experimental beauty shop.







Left-hand column, top to bottom—The four photomicrographs show the action of suds on a single strand of hair. The churning detergent action of the cleaning solution is clearly shown, as the millions of tiny bubbles keep up a continuous pulling and pushing and bombardment until the hair fiber is clean.

Bottom—Developed by the research laboratories of Procter & Gamble Co., this combination of movie camera and microscope facilitates the laboratory study of detergency.

DETERGENCY STUDIED

by Photomicrographic Movie Technique

A NEW use of the microscope in studying the mechanism of detergency was demonstrated recently by the Procter & Gamble Company at a luncheon given in New York for a group of science editors. The unique feature of this use was that a motion picture, taken through the microscope, was used to show what actually happens when detergent solutions come in contact with dirt.

The development of the equipment used to produce this micrographic motion picture is the outgrowth of the continuous study being carried on by the research division at the Procter & Gamble Company laboratories at Ivorydale on the mechanism of detergency. The advantage of having a method of observing the action of detergents and of making a record of that action is obvious. Another advantage of this technique is that it makes possible the study of the washing action on single fibers.

The equipment consists essentially of a source of light, an iris diaphragm, a polarizer (for use only in studies where polarized light is of value), a special glass cell in which the action takes place, a microscope mounted horizontally and equipped with a prism eyepiece, and finally a 16 mm. movie camera. The glass cell is so mounted that it can be raised or lowered at will. At one side of the cell is a reservoir in which a stirring mechanism causes the circulation of the detergent solution at any desired speed. The fiber to be washed is mounted securely in a metal holder placed in position over the detergency cell. If direct observation of the action is desired, rather than a motion picture, a ground glass or other type of screen can be mounted in the focal plane of the camera.

The particular film shown to the group of editors — others have been made — has to do with the washing of hair — a more or less specialized type of washing process. The striking difference in the action of two detergents — a coconut oil soap and an alkyl sulfate—was illustrated. The picture's opening shots show a girl having her hair shampooed in the experimental beauty laboratory at Ivorydale. Then the washing of single hairs in solutions of the two detergents is shown and finally the difference in action of these two detergents is shown to have a definite effect on the hair of the subject being shampooed. This is accomplished by washing the subject's hair by the "half-head" technique; soap on one side, alkyl sulfate on the other.

In the microscopic pictures the natural soil on the hair is shown to be lifted off the hair in minute particles by the action of the detergent solution. When artificial soils such as fatty acids and mineral oil are used, the soil first forms into drops and then leaves the hair.

The difference in the action of soap and alkyl sulfate shown by this motion picture is, first of all, the formation of a complex material by an interaction of soap and soil (apparent as a semi-transparent "halo" around each particle of soil) whereas no such complex forms with alkyl sulfate; and second, the formation of lime soap curd with soap in hard water and the lack of such formations with alkyl sulfate. The first of these phenomena is not clearly understood and needs further study. It is known, however, that this material is apparently harder to remove from the hair than is the original soil.

The second of these differences — the formation of calcium and magnesium soaps during rinsing — is the familiar formation of lime soaps which accompanies washing in hard water. In this movie the lime soaps are shown to be attracted to the hair during rinsing, carrying some of the dirt removed from the hair back to it. The result as far as the "half-head" subject is concerned is that the hair on one side of the head appears dull and somewhat lifeless, whereas the hair on the alkyl sulfate washed side has a high lustre.

The synthetic detergent referred to above is the sulfated alcohol used in the manufacture of the Procter & Gamble products "Dreft," "Drene," "Orvus," etc. The results shown in the movie might well apply to other synthetic detergents with properties similar to those of the alkgl sulfates.

The usefulness of this apparatus in the study of detergent problems is without limit. In their research, Procter & Gamble technicians have watched the effect of various detergents on different types of soil, the effect of temperature on the removal of various soils from all types of fibers — cotton, wool, hair, silk, rayon, etc.—and many of the other variations which enter into the mechanism of detergency. The number of possible variants in any one study is tremendous—the type of soap or detergent and the concentration, the temperature and hardness of water, the type of soil, the type of fiber, the amount of agitation, etc. However, with this new approach, perhaps a clearer understanding of the fundamental action of soaps and detergents can be obtained.

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TRADE NEWS. . . .

Bivins Detrex Western Mgr.

S. H. Bivins has just been appointed manager of western regional industrial sales for Detrex Corp., Detroit, manufacturers of industrial cleaning equipment, drycleaning equipment and chemical cleaning compounds. His headquarters will be in Chicago. Until his recent appointment, he had held the position of divisional manager in Ohio.

Lever Hammond Plant Shut Down

Because of the crisis caused by the coal strike, Lever Bros. Co., closed their Hammond, Ind., plant for two weeks in May. Employees were told to consider the layoff as their annual vacation period.

Stop Operation of Family Soap

Family Soap Co., 1338 Fullerton Ave., Chicago, was placed under a temporary restraining order in April, stopping its use of fats and oils. Charges presented at a hearing in federal district court were to the effect that the company had been using these materials for soap making without having a quota.

Ontario P & G Supervisor Dies

Francis William Wade, Ontario sales supervisor for Procter & Gamble Co. of Canada for the past twenty years, died last month at his home in Toronto. Born in England, Mr. Wade came to Canada thirty-six years ago, being the first representative of the firm to be appointed in Canada.

Luckman New Lever President

The election of Charles Luckman as president of Lever Bros. Co. was announced June 3 by the Lever board of directors. He is to succeed Francis Countway in this position on July 1. Mr. Luckman was formerly executive vice-president of the company, as well as president of its Pepsodent division. He brings to his new post a remarkably successful record in the field of sales, merchandising and advertising. During his ten years as

CHARLES LUCKMAN

an executive of Pepsodent Co., that concern changed an annual loss into a record of steadily advancing profits, and Pepsodent rose in the dentifrice field from fifth to first place. Mr. Luckman is 37 years old.

Mr. Countway is retiring after 48 years with Lever Bros. Co., including 33 years as president. Under his direction the company grew from a relatively minor position in the American soap market to become one of the leading concerns in the industry.

Cleaning Compound Spec.

The Technical Committee on Detergents appointed by the Federal Specifications Board has just prepared a proposed new federal specification for Cleaning Compound Containing Synthetic Detergent. Comments and criticisms are requested from the trade to guide the committee in making such revisions of the tentative draft as may be found necessary. Copies of the specification are available, and correspondence concerning it may be addressed to F. W. Smither, Technical Committee on Detergents, Federal Specifications Board, Washington, D. C.

Open Synthetic Detergent Plant

World Chemical Corp., 1819 Broadway, New York, has recently opened a new plant located in Queens, N. Y., for the manufacture of synthetic detergents for the soap, industrial cleaner, textile and leather fields. Mortimer A. Fischer is president of the company and Arthur A. Lehmann is secretary-treasurer. Mr. Lehmann is also president of Leecol Products, Inc., New York, manufacturers of chemical specialties.

Bean Joins Ethyl Specialties

Henry S. Bean, formerly with Lever Bros. Co., Cambridge, Mass., has recently been appointed sales promotion manager of Ethyl Specialties Corp., a subsidiary of Ethyl Corp., New York, formed recently to market "Ethyl Cleaner," a synthetic detergent, and other chemical specialties.

Raise Yellow Laundry Soap Prices

Permissible ceiling prices on yellow bar laundry soaps were advanced approximately twenty per cent by the action of the Office of Price Administration May 24 in issuing amendment 8 to MPR-391. Maximum prices for resale of this product by wholesalers and retailers were also advanced proportionately by issuance of amendment 11 to MPR-390. In a statement accompanying the new amendment, OPA pointed out that soap manufacturers have tended to shift their limited quotas of fats and oils into production of soaps which can be marketed more profitably than yellow laundry bars, and that a price increase was necessary to insure resumption of normal percentage production of yellow laundry soap.

Italy Gets Brazilian Soap

A cargo of 420 tons of Brazilian soap has recently arrived in Naples, UNNRA reports, the first soap to be imported into Italy in several years.

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Varley Heads Sanitary Supply Association

ADOPTION of a new constitution, discussion of credit policies and public relations, election of new officers, and the largest attendance in history featured the 23rd annual convention of the National Sanitary Supply Association in Chicago, May 26-29. The new president of the association is Jack Varley of Baird & McGuire, Inc., of St. Louis, Missouri. Jules Lovinger of Lovinger Disinfectant Co., Salt Lake City, Utah, is vice-president, Harry Appel of Milwaukee is secretary, and Carl B. Lien of Lien Chemical Co., Chicago, is treasurer.

The organizational set-up provided for in the new constitution includes four regional vice-presidents, elected as follows: eastern, 1 year, Martin J. Peters, Moore Bros. Co., New York; central, 2 years, Mal Flanagan, Federal Varnish Co., Chicago; southern, 1 year, S. P. Solomanson, Dixie Disinfecting Co., Dallas; and western, 2 years, William White, Commodity Sales Co., Oakland, Calif. Directors at large include Howard Young, Davies-Young Soap Co., Dayton, Carter Laitner, Laitner & Son, Detroit, Robert Lockhart, Candy & Co., Chicago, and E. W. Mikesell, U. S. Chemical Co., Greenville, Ohio.

Action on the new constitution and by-laws followed two years of intensive study by a committee headed by Marshall L. Magee, T. F. Washburn Co., Chicago, a past president of the association. For more efficient administration four geographical units have been established, each to hold its own sectional meetings and each to be under the supervision of a vice-president from that area. Length of terms of officers and board members will be varied to insure periodic changes in the make-up of the governing body which will at all times consist of six manufacturers and six distributors.

Dues were raised $10 per year and the increased revenue will be used to meet the cost of the sectional meetings and to build up a testing laboratory program under which products bought by distributor members will be approved as to content, performance, etc. The membership of the association has grown remarkably over recent

JACK VARLEY

years, and now numbers over 500, as compared with 233 members only two years ago.

New post-war products were liberally shown by the nearly seventy exhibitors whose displays completely filled the Morrison Hotel's Mural Room and adjoining parlors, as well as several private rooms.

Some startling revelations regarding current credit conditions were made by E. B. Moran, manager of the Central Division of the National Association of Credit Men, in an address at the morning session, May 27, "Synchronizing Sales and Credit." A tremendous number of "N.S.F." checks are being returned by banks—"more in a week than formerly in years," he said. Black market profits are being used to start new businesses which vanish over night when income tax collectors catch up with their work. Veterans are going into business for which they have no ability with the certainty that they face bankruptcy in short order. Before he goes into business the ex-soldier should learn what it's all about first, the speaker warned. Credit managers have a right to ask where the capital is coming from. They should act as business counselors to the beginners and, if advisable, recommend that the veteran go to work for others first to gain the knowledge of business he may lack. Mr. Moran recommended closer coordination between sales and credit departments. A predetermined ceiling or limit on credit should be set on individual sales accounts, he suggested.

Dr. Victor Froelicher of the Geigy Co., New York, spoke on DDT, discussing the history of its development for insecticidal uses, and discussing acceptable formulations for various pest control jobs. His talk was followed by a question and answer session which served to clarify some of the mistaken notions which still persist regarding this relatively new insecticide material.

Public relations as an important phase of all industrial operations were discussed by J. Robert York, western service manager of the Bureau of Advertising. In a series of case histories drawn from public relations work, he suggested what this increasingly important adjunct of business can accomplish. Another talk "Your Industry Sales Problems" was given by Thomas Collins, publicity director of the City National Bank of Kansas City.

At the May 28th session Alfred Richter of the St. Louis Janitor Supply Co., St. Louis, was singled out for particular honor in recognition of his vision twenty-three years ago in the formation of the association. S. J. Bockstanz of Bockstanz Bros., Detroit, retiring president of the association, presented Mr. Richter with a hand lettered scroll and related how Mr. Richter had invited seven other members of the industry to meet with him back in 1923 to discuss the formation of the group which is today the National Sanitary Supply Association.

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Issue Soap Reference Sheet

A brief folder, "Soap (Basic Information Sources)" has been issued recently by the Chemicals and Drugs Section, Office of Domestic Commerce, Washington, D. C. It lists the reference sources in the industry and reviews the various federal regulations covering soap.

Inspiration for fine perfumes

Sylvenol

A Distinguished Specialty of the Precious Wood Type

Sylvenol is a stimulating contribution to the art of perfumery . . . a constant inspiration to the blender. An extremely powerful aromatic, its odor is definitely of the precious wood type, reminiscent of sandalwood, cedar, patchouli and vetiver. It is also suggestive of orris and high grade ionones. *Sylvenol* is capable of countless extremely interesting effects, especially in modern and oriental type perfumes.

Sylvenol is a Dow specialty. Like all Dow Aromatics, it is a quality material, held to exacting standards of uniformity and odor fidelity. Your inquiries are cordially invited.

DOW AROMATIC PRODUCTS—Coumarin, Cyclotone, Diphenyl Oxide, Dylene, Methone, Cardenalene, Jasmal, Methyl Anthranilate, Methyl Phenyl Carbinol Acetate, Methyl Salicylate, Vanillone, Phenyl Ethyl Acetate, Phenyl Ethyl Alcohol, Styrene P-100, Sylvenol, and others—

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis
Houston • San Francisco • Los Angeles • Seattle

Synthetic

AROMATIC

Chemicals

DOW

CHEMICALS
INDISPENSABLE TO INDUSTRY

Among those present at the CBS party honoring the stars on the "Blondie" program, sponsored by Colgate-Palmolive-Peet Co. were (seated) Joseph H. Ream, CBS, E. H. Little, C-P-P president, Penny Singleton (Blondie), William Esty, William Esty & Co., C-P-P advertising agents, (standing) Arthur Lake (Dagwood), Wm. C. Gittinger, CBS, and R. E. Healy, C-P-P vice-president in charge of advertising.

Colgate Unveils Sign

A reception for Penny Singleton and Arthur Lake, stars of the Super Suds radio show "Blondie and Dagwood," marked the unveiling May 9 of a new Super Suds spectacular electric sign in Times Square, New York. The reception, held on the Astor Hotel roof, overlooking the big sign, numbered among its hosts, Mr. and Mrs. E. H. Little, president of Colgate-Palmolive-Peet Co., Mr. and Mrs. James A. Reilly, Mr. and Mrs. Breckinridge Jones, Mr. and Mrs. R. B. Weidinger, Mr. and Mrs. A. A. Lichtenstein, Mr. and Mrs. Manning O'Connor, Mr. and Mrs. R. E. Hilbrant, Mr. and Mrs. A. N. LaBelle, Mr. and Mrs. C. N. Crittenton, Mr. and Mrs. R. W. Peet, Mr. and Mrs. H. F. Elberfeld, Mr. and Mrs. H. R. MacMillan, Mr. and Mrs. Mason Trobridge, Mr. and Mrs. H. W. Reynolds, Mr. and Mrs. R. E. Healy, Mr. and Mrs. A. J. Roby, Jr., Mr. and Mrs. J. S. Moorman, Mr. and Mrs. F. S. Drake, Mr. and Mrs. M. S. Lachner, Mr. and Mrs. W. E. Hayman, Mr. and Mrs. J. Marshall, Mr. and Mrs. W. L. Sims, II, Mr. and Mrs. M. P. Frawley, Mr. and Mrs. J. W. Kilcran, Ralph R. Robertson, and C. D. Pearce, all of Colgate-Palmolive-Peet Company.

Speedite Issues Cleaning Catalog

Speedite Chemical Corp., 5348 Broadway, Chicago 40, Ill., has issued a new catalog presenting its cleaning and polishing products for use outside the aircraft and automotive fields, in which the company has specialized for fifteen years. Items in the line include a cleaner and polisher for various types of surface finishes; a soapless powder for cleaning upholstery and rugs; and a solvent fabric cleaner. Current advertising is being directed particularly to the institutional field.

"Co-op" Cleanser Again Available

National Cooperatives, Inc., 343 S. Dearborn St., Chicago, has notified its member units that "Co-op" dairy and household cleanser is again available in sufficient quantities to meet demands that have been unsatisfied for several months. A new 3-pound carton, to be labeled "Co-op Household Cleanser" will also be packaged in the near future, according to announcement from this purchasing agency which serves over twenty regional cooperatives.

Cosmetic Chemists Meet

The Society of Cosmetic Chemists held its first open meeting at the Lexington Hotel, New York, May 15. Maison G. DeNavarre, Detroit consulting chemist is president of the new organization, Dr. Philip D. Adams of Andrew Jergens Co. is secretary, and Emery Emerson of John H. Breck, Inc. is treasurer. The program consisted of five technical papers as follows: "The Perfumer's Art," by Henri Roberts, president of Henri Roberts, Inc.; "The Three Prime Factors in Successful Packaging," by E. C. Manuel, chief chemist of the glass and closure division of the Armstrong Cork Company; "Zinc Oxide in Face Powder," by L. D. Grady, of the New Jersey Zinc Company; "Color Matching in the Cosmetic Industry," by E. I. Stearns, of the research department of the Calco Chemical division of the American Cyanamid Company, and "Antiperspirants," by Ruth Bien, of the Good Housekeeping bureau laboratory.

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CSA To Golf at Baltusrol

The first 1946 golf tournament of the Salesmen's Association of the American Chemical Industry will be held at Baltusrol Golf Club, Springfield, N. J., June 18. The second tournament is to be held at Winged Foot Golf Club, Mamaroneck, N. Y., July 23. The August tournament has been set for August 20 at Plainfield Country Club, Plainfield, N. J. Jack Seidler of Whittaker, Clark & Daniels, Inc., 260 West Broadway, New York, is chairman of the entertainment committee for this year's tournaments. Members of the association heard a talk by Wallace P. Cohoe, president of the Chemists' Club at a luncheon at the Hotel Roosevelt, May 23.

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Boston BIMS Hold Outing

The Boston BIMS were scheduled to hold their first golf outing of the 1946 season at the Commonwealth Country Club, Newton, Mass., June 5th. Arrangements for the affair were in charge of the executive committee which is headed by C. Ernest Ingham, Ingham & Co., chairman, C. M. Roper, Owens-Illinois Glass Co., acted as member host at the June 5th gathering.

INTRODUCING TWO NEW AIDS TO BETTER SOAP PERFUMING . . . .

AID NO. 1

A group of perfume specialties designed to accomplish the following: 1. "Freshen up" the floral character of the soap odor; 2. counteract the artificial note that characterizes many toilet soap perfumes; 3. impart additional fixation and 4. give the finished soap a fuller and more lasting fragrance. The addition of no more than 10% of SAVONAFIX to the soap oil achieves these results. Finished samples of soap, with and without SAVONAFIX, are available to those who would like a practical demonstration of the advantages of this important new perfume specialty.

SAVONAFIX

is available in the following odor types:

SAVONAFIX FOUGERE
SAVONAFIX GERANIUM
SAVONAFIX JASMINE
SAVONAFIX LAVENDER (Green)
SAVONAFIX LAVENDER (Decolorized)
SAVONAFIX OAK MOSS
SAVONAFIX ROSE

AID NO. 2

This new series of products will help soapmakers: 1. To lend a more natural note to the odor of their finished soaps; 2. to economize substantially through the use of these less costly BASICOLS as substitutes or stretchers for the natural oils and 3. to improve the lasting qualities of their products' fragrance through BASICOLS' powerful fixation. Samples using BASICOL and its corresponding essential oil will be supplied upon request as the best and most convincing proof of the value of these materials to the soapmaker.

BASICOLS

now available in the following types:

BASICOL GERANIUM
BASICOL LAVENDER
BASICOL LEMON
BASICOL NEROLI
BASICOL PINE
BASICOL YLANG YLANG

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

1871 1946

Our 75th Year of Service

Soaps at Safety Conference

Fairfax Chemical Co., St. Louis, presented its new line of protective hand creams and lotions for the first time at the 23rd Midwest Safety Conference and Exposition in Chicago last month. Organized five years ago to supply the demand from industrial war workers, Sam Kaufman, company president, said a vigorous campaign has been launched to continue and extend use of the eleven different formulas developed to treat different types of dermatoses. Twelve other manufacturers of soaps, protective creams and plant sanitation maintenance products also participated in the safety show.

Nuzon Company of America, Pittsburgh, demonstrated their odorless sanitation system with "Nuzon," an odorless deodorant. Trojan Products department of the Diversey Corp., Chicago, another new exhibitor at the show, featured their "Trojan Derma-Terge" and new "Derma-Skour" powdered hand soaps, also a cleaning compound, "Electro-Purj-It," and "Quik-Sil," an oil and grease absorbent for floors.

Industrial soaps were featured by Lightfoot Schultz & Co., New York, G. H. Packwood Mfg. Co., St. Louis, Sugar Beet Products Co., Saginaw, Mich., West Disinfecting Co., Long Island City, N. Y., and Stepan Chemical Co., Chicago. Safety flooring and floor maintenance products were shown by Walter G. Legge Co., Safety Floor Products Co., and Oil-Dri Corp. of America. Among displayers of protective creams were the Milburn Co., Detroit, Mine Safety Appliance Co., Pittsburgh, and the Citrox Laboratories, Inc., Chesterland, O.

Henry Cutts Dies

Henry E. Cutts, who was vice-president and treasurer of Stillwell & Gladding, consulting chemists, New York, died May 30 at his home in Tenafly, N. J. He was 78 years old.

Foster D. Snell Heads AIC

Foster D. Snell, president of Foster D. Snell, Inc., Brooklyn, consulting chemists, has recently been elected president of the American Institute of Chemists.

Fanning Opens Sales Agency

Frank Fanning, formerly sales director for N. I. Malmstrom & Co., Brooklyn, has opened offices at 50 East

FRANK FANNING

42nd St., New York, as a sales agent for a line of products including lanolin, degras, beeswax, lecithin and industrial and pharmaceutical chemicals.

P & G Chi Plant Safety Award

Procter & Gamble's Chicago manufacturing plant was one of eighteen companies receiving awards at the 23rd annual Midwest Safety Conference in Chicago last month in recognition of outstanding records in accident prevention work during the last six months of 1945.

Whiteway Returns To P & S

Stanley Whiteway, formerly advertising manager of Proctor & Schwartz, Inc., Philadelphia manufacturers of soap drying machinery, has returned to active duty with the company after three years in the Army. He will become publicity director, while John Reinhardt will continue as advertising manager.

Call to Pennsalt Research Post

Dr. W. A. Lalande, Jr., director of Whitemarsh Research Laboratories, Pennsylvania Salt Manufacturing Company, has announced the appointment of Dr. John F. Gall as assistant research supervisor to assist in the coordination of the experimental activities of the research division.

Issue Naval Stores Report

The 1945-46 annual Naval Stores Report has just been issued by the Naval Stores Research Division of the United States Department of Agriculture, giving figures on production, consumption and the changing stock picture for the period April 1, 1945 through March 31, 1946. Carryover stocks of rosin (gum and wood) were 388,266 drums (520 lbs.) as of March 31, 1945. During the 1945-46 crop year production totaled 1,452,036 drums, with imports of 9,795 drums. During the year consumption totaled 1,461,415 drums, of which 1,254,605 drums was domestic and 206,810 drums exported. This left carryover stocks as of March 31, 1946, practically unchanged at 388,682 drums from the figure for the previous year.

Berlage Co. Incorporates

Incorporation of J. Berlage Co., exporters and importers, 10 East 40th Street, New York 16, New York, was announced this month by Jan Berlage, president. New name of the corporation, which became effective May 1, is J. Berlage Company, Inc. Berlage handles exports and imports of chemical and pharmaceutical raw materials, laboratory equipment, etc., acting as manufacturers agents or buying agents for foreign importers, as well as selling agents for foreign exporters of raw materials.

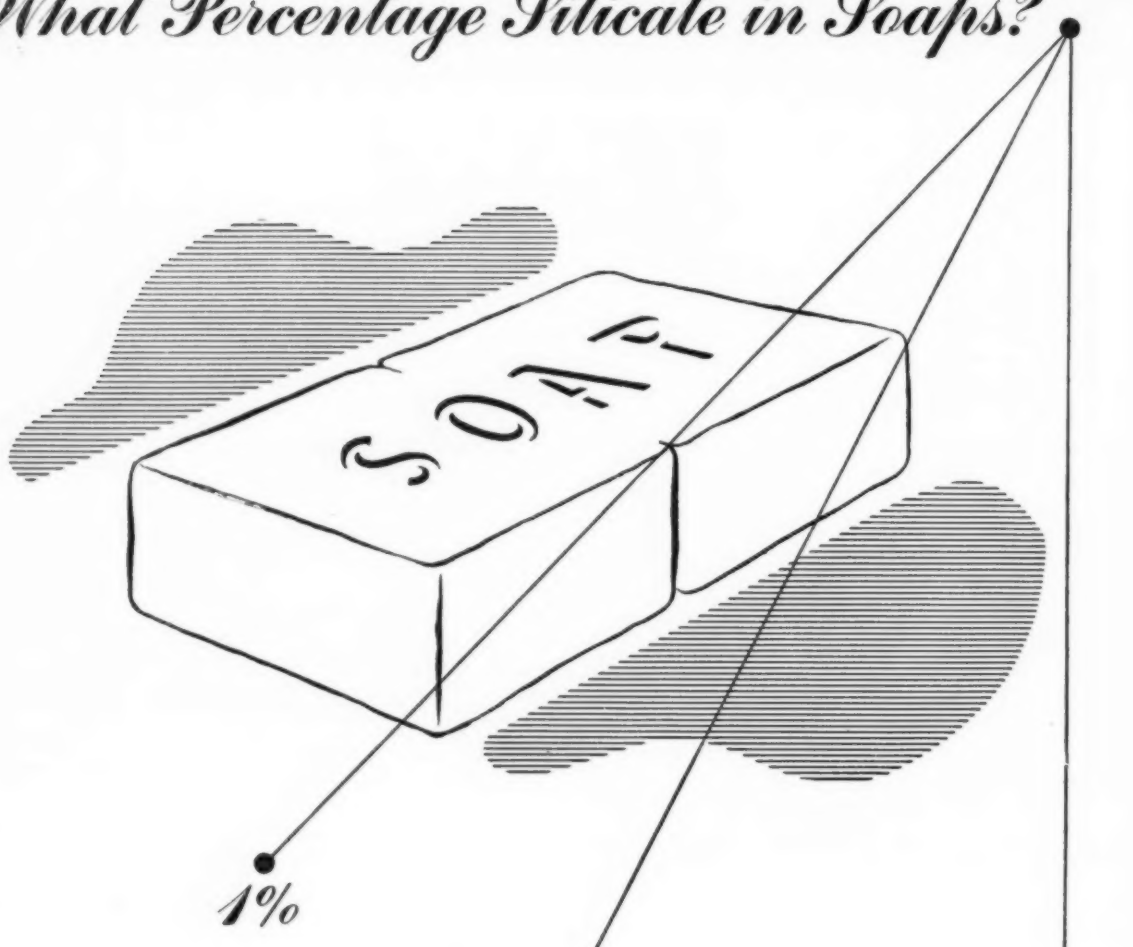
Asp Rejoins Filtrol Corp.

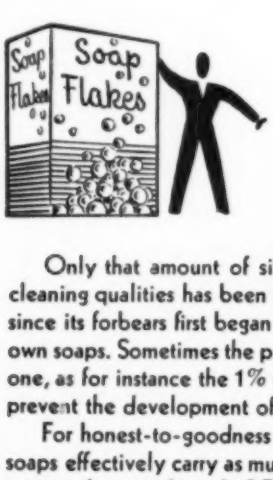
Major Stanley Asp has recently returned to his former duties with the research division of Filtrol Corp., Los Angeles, after three and a half years of active service with the Corps of Engineers. Major Asp was first engaged in supply operations for the initial Pacific campaigns, and later helped to outfit the 1st and 3rd Armies for the invasion of Normandy.

Chi. Chem. Show Sept. 10-14

The Fourth National Chemical Exposition will be held at the Chicago Coliseum, September 10-14, concurrently with the semi-annual meeting of the American Chemical Society which will be held in Chicago September 9-13.

What Percentage Silicate in Soaps?





Only that amount of silicate that adds better cleaning qualities has been PQ's recommendation since its forbears first began to use silicate in their own soaps. Sometimes the percentage is a very low one, as for instance the 1% used in toilet soaps to prevent the development of rancid odors.

For honest-to-goodness cleaning action, some soaps effectively carry as much as 50%. What percentage for your formulas? That will depend on the type of soap, the character of the ingredients and its intended application. Whatever oils you are using, there is a way to incorporate a PQ Silicate to produce quality soap—quality in appearance and performance. It may be an increase in the quantity of silicate incorporated, or on the other hand, the answer may lie in a different silicate from that which has been your regular brand.

May we discuss with you how you can use PQ Silicates to better advantage, and share with you the benefit of our experience.

PHILADELPHIA QUARTZ CO.

DEPT. B, 129 SOUTH THIRD STREET, PHILADELPHIA 6, PA.

PQ SILICATES OF SODA

Ernest A. Houchin Dies

Ernest A. Houchin, president of Houchin Machinery Co., Hawthorne, N. J., died at his home in Ridgewood, N. J., May 20 after a brief illness. Mr. Houchin was born in England in 1867 and came to the United States as a boy. His father set up a soap and candle machinery business, and following his death Ernest Houchin left school at the age of fourteen to enter the business with his two brothers. The brothers later retired, but Ernest continued the business under various company names. He was at one time associated with C. Schubert, and later, from 1897 to 1908, was in partnership with the late Anthony Huber under the firm name of Houchin and Huber. In 1908 Mr. Houchin and Charles W. Aiken incorporated the Houchin-Aiken Co. When Mr. Aiken withdrew from the organization in 1930, the business was incorporated under its present name. Mr. Houchin's son, Albert T. Houchin is vice-president of the company, and Aubrey R. McQuillin secretary and treasurer. They will continue to operate the business.

Fred Ungerer Recovered

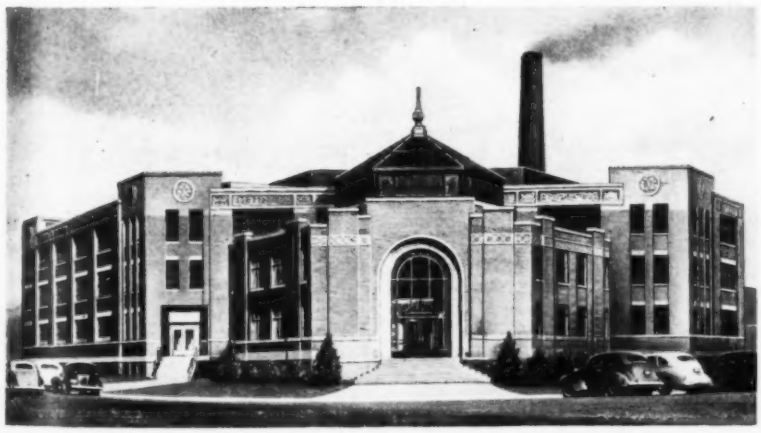
Frederick Ungerer, president of Ungerer & Co., New York, has again returned to his desk and active management of that company after an illness of two months. Mr. Ungerer underwent an operation and was confined to the Montclair Hospital, Montclair, N. J. for over a month. He now reports himself fully recovered and in fighting trim.

G. H. Wood Acquire New Plant

G. H. Wood & Co., Toronto, well-known Canadian manufacturers of sanitary supplies, have purchased new factory and office buildings located on the south-east corner of Bathurst and Fleet Streets, Toronto. The new plant and offices comprise three buildings with floor space in excess of 100,000 feet situated on a three acre tract of land and serviced by three railway sidings with loading facilities for twenty trucks at a time. The main building is a four story and basement reinforced concrete structure with 16,000 square feet per floor. Offices will be housed in a separate two story modern daylight building. Warehouse facilities are in another building 18,000 square feet in area adjacent to rail sidings with capacity for eight box cars.

The new plant is now being equipped with latest type machinery for the production of liquid soaps, disinfectants, insecticides, waxes, paper specialties, and allied sanitation products and toiletries, according to Geoffrey H. Wood, president of the company. Occupancy of the new plant will follow as soon as new equipment is installed. W. J. Evans will continue to act as general superintendent and P. J. Ammann as chief chemist. The present plant at 323 Keele St., Toronto, will be vacated.

G. H. Wood & Co. was founded in 1923. At present, in addition to its main Toronto plant, the company has 24 branch offices throughout Canada and branch plants in Montreal and Vancouver and employs over 500 persons.



A.O.C.S. Elects Sorenson

S. O. Sorensen of the Archer-Daniels-Midland Co., Minneapolis, was elected president of the American Oil

S. O. SORENSEN

Chemists' Society at the annual meeting in New Orleans, May 15-17. Serving with him for the coming year will be the following: R. T. Milner, Northern Regional Research Laboratory, Peoria, Ill., 1st vice-president; H. E. Longenecker, University of Pittsburgh, 2nd vice-president; C. P. Long, Procter & Gamble Co., Cincinnati, 3rd vice-president; and L. B. Parsons, Lever Bros. Co., 4th vice-president. H. L. Roschen of Swift & Co., was re-elected secretary, and J. P. Harris, Industrial Chemical Sales Division of West Virginia Pulp and Paper Co., treasurer.

BIMS to Golf at Baltusrol

The BIMS of New York will hold their opening golf tournament of the 1946 season at Baltusrol Golf Club, Springfield, N. J., on June 27. Later season tournaments have been planned for August 13 at Winged Foot Golf Club, Mamaroneck, N. Y., and for September 13 at Wheatley Hills Golf Club, East Williston, L. I. Martin F. Schultes of Hewitt Soap Co., perennial chairman of the entertainment committee, will be in charge of arrangements for the tournaments, and has asked that reservations be made well in advance of the outing dates.

Shanahan Innis Export Mgr.

Major Frank T. Shanahan has just been appointed manager of the export sales division of Innis, Speiden & Co., New York.

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GEORGE LUEDERS & CO.

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CLOVE
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CARDAMOM
OPOPONAX
CELERY
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RESINS
BALSAM PERU
BALSAM TOLU
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NEW TRADE MARKS

The following trade-marks were published in the May issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Mark Applications

JEPS—This in lower case, open letters superimposed on a semi-spheric design for metal polish and metal cleaner. Filed Sept. 14, 1945 by Jeps Products Co., Philadelphia. Claims use since Aug. 1, 1945.

SNUFF—This in upper case, extra bold letters for soaps in cake and stick form. Filed Nov. 16, 1945 by Parfums Schiaparelli, Inc., New York. Claims use since Aug. 6, 1945.

PROCTO—This in upper case, extra bold, black letters for sudsing cleaner, cleanser and detergent. Filed Nov. 17, 1945 by Procter & Gamble Co., Cincinnati. Claims use since Oct. 31, 1945.

TRELLIS—This in upper case, medium letters for soap. Filed Nov. 19, 1945 by Roycemore Toiletries, Inc., Chicago. Claims use since May 7, 1940.

SMACK—This in upper case, extra bold, black letters for cleaning compound for general use. Filed Nov. 20, 1945 by John T. Stanley Co., New York. Claims use since Nov. 2, 1945.

AIM—This in upper case, extra bold, black letters for liquid dry cleaner. Filed Nov. 21, 1945 by Atlantic Refining Co., Philadelphia. Claims use since Aug. 28, 1944.

INTERNATIONAL—This in upper case, open letters within two circular lines and surrounding a white triangular section of a blackened inner circular area, describing insecticides. Filed Dec. 15, 1945 by International Lubricant Co., Southport, La. Claims use since March, 1937.

GENIE—This in upper case, open letters partially across the fanciful drawing of a genie carrying a mop in one hand and a bucket in the other for all-purpose cleaner for floors, walls, woodwork, carpets, rugs, upholstery, furniture, porcelain, etc. Filed Sept. 10, 1945 by Crown Chemical Co., Cleveland. Claims use since July 7, 1945.

LAGNIAPPE DAY—This in upper case, bold letters for liquid paint cleaner. Filed Nov. 21, 1945 by Soil-Off Manufacturing Co., Glendale, Calif. Claims use since Oct. 20, 1945.

ON DIT—This in upper case, extra bold, black letters for shaving cream, face and bath soaps. Filed Nov. 23, 1945 by Elizabeth Arden Sales Corp., New York. Claims use since Apr. 10, 1944.

DAMA DE NOCHE—This in upper case and lower case, extra bold, black letters for shampoo. Filed Nov. 1, 1944 by Bravo Manufacturing Co., Chicago. Claims use since Feb. 15, 1944.

AJAX JUNIOR—This in upper case, extra bold letters for sterilizer and deodorant. Filed Sept. 7, 1945 by Acme Chemical Co., Milwaukee. Claims use since June 9, 1936.

SAVEE—This in upper case, bold letters for insecticide. Filed Nov. 7, 1945 by Eight-In-One Products Co., Valdosta, Ga. Claims use since Aug. 27, 1945.

DIANOL—This in upper case, bold letters for insecticide and insect repellent. Filed Dec. 5, 1945 by Robert D. Spiers Laboratories, St. Petersburg, Fla. Claims use since Nov. 28, 1945.

LEADWAY—This in upper case, extra bold, black, italic letters superimposed on an arrow for toothpaste. Filed Dec. 17, 1945 by Leadway Stores Corp., Chicago. Claims use since July 20, 1945.

DUST 75—This in upper case, open and solid, bold letters, the word "dust" superimposed on the numerals 75 for insecticides and fungicides. Filed Dec. 22, 1945 by Smith Manufacturing Co., Utica, N. Y. Claims use since Feb., 1941.

GUARDSMAN—This in upper and lower case, old English letters above the words "cleaning polish," all of which is enclosed in an ornate frame that is topped off by a drawing of a knight's helmet for furniture, automobile, etc., cleaning polish. Filed Sept. 17, 1945 by Grand Rapids Varnish Corp., Grand Rapids, Mich. Claims use since Sept. 1, 1945.

GUARDSMAN—This in upper and lower case, old English letters above the words "self-polishing wax," all of which is enclosed in an ornate frame topped off by the drawing of a knight's helmet for self-polishing wax for furniture, automobiles, and finished surfaces generally. Filed Sept. 17, 1945 by Grand Rapids Varnish Corp., Grand Rapids, Mich. Claims use since Sept. 1, 1945.

BLUVOX—This in upper case, oversize, extra bold, black letters for cleaning and polishing preparation. Filed Oct. 10, 1945 by Bluvox Co., Los Angeles. Claims use since July 11, 1933.

PUR-O-ZONE—This in upper case letters in circular arrangement around a shield like design within a circle from which parallel triple lines form tangents to the circle, for germicidal soaps and floor finishes. Filed Aug. 11, 1944 by Pur-O-Zone Chemical Co., Lawrence, Kans. Claims use since May 15, 1944.

SOLVOIL—This in upper case, extra bold, black letters for solvent for washing floors and walls of service stations. Filed June 15, 1945 by Soluble Oil, Inc., Jersey City, N. J. Claims use since May 10, 1945.

SOLVOL—This in upper case, extra bold, black letters for solvent for washing floors and walls of service stations. Filed June 15, 1945 by Soluble Oil, Inc., Jersey City, N. J. Claims use since May 10, 1945.

ACTIVOL—This in upper case, bold, stencil letters for liquid detergent. Filed July 18, 1945 by Haas-Miller Corp., Philadelphia. Claims use since Mar. 5, 1936.

DAY & FRICK—This in upper and lower case, bold, black letters for

soap. Filed Sept. 13, 1945 by Day & Frick, Philadelphia. Claims use since 1889.

MUROKLEEN—This in upper and lower case, extra black, bold letters for cleaning preparation. Filed Nov. 28, 1945 by Murokleen Co., Iron Mountain, Mich. Claims use since June 18, 1945.

GUNK—This in upper case, extra bold, black letters for self-emulsifying colloidal detergent solvent. Filed Nov. 29, 1945 by Curran Corp., Malden, Mass. Claims use since Feb. 10, 1932.

MAIS OUI—This in upper and lower case, extra bold, black, script letters for toilet and bath soap. Filed Dec. 3, 1945 by Bourjois, Inc., New York. Claims use since Sept. 25, 1945.

WHITE CHRISTMAS—This in upper case, extra bold, black letters for soap. Filed Dec. 3, 1945 by Carl A. Futter, Chicago. Claims use since Oct. 22, 1945.

CARBOFF—This in upper case, extra bold, stencil letters for preparation for removing carbon from tanks, etc. Filed Oct. 8, 1945 by New Process Service Co., San Francisco. Claims use since Sept. 19, 1944.

EVAPRO—This in upper case, extra bold, black letters for preparation for flushing and flashing scale from tubes. Filed Oct. 8, 1945 by New Process Service Co., San Francisco. Claims use since Sept. 19, 1944.

LUXALENE—This in upper case, reverse letters on small block backgrounds, the letters descending on a sharp angle from right to left for preparation for use as water softener and soap saver. Filed Oct. 29, 1945 by Luxalene Co., Detroit. Claims use since Apr. 1934.

RED TEA—This in upper case, bold letters for shampoos. Filed Dec. 6, 1945 by Associated Products, Inc., Chicago. Claims use since Oct. 29, 1945.

BEACON—This in upper case, bold letters for floor wax. Filed Nov. 20, 1945 by Beacon Co., Boston. Claims use since 1926.

RENLEIGH—This in upper and lower case, bold, old English letters for brushless shaving cream and shaving bowls containing soap. Filed Dec. 19, 1944 by Weldon, Inc., West Haven, Conn. Claims use since Feb. 3, 1937.

JF—This in upper case, extra bold, black, script letters for shaving cream, facial and bath soaps. Filed Oct. 31, 1945 by John Fredericks, Inc., New York. Claims use since Apr. 1, 1944.

PRISMA—This in upper case, bold letters for detergents. Filed Nov. 2, 1945 by Elizabeth Weston Parker, Washington, D. C. Claims use since Sept. 21, 1945.

DAIZEE—This in upper case, open letters around and above the drawing of a daisy for dry cleaning compound. Filed Dec. 4, 1945 by Daizee Products Co., Rego Park, N. Y. Claims use since Oct. 24, 1945.

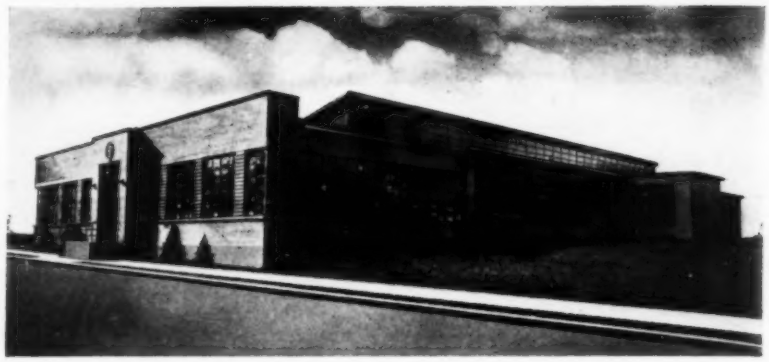
SAGEBRUSH "346"—This in upper and lower case script and roman face letters above the words "Brooks Brothers," all of which are over the drawing of a sheep, for shampoo for the hair. Filed Feb. 17, 1945 by Brooks Bros., New York. Claims use since Feb. 13, 1945.

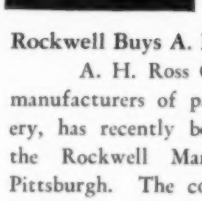
PAMECO—This in upper and lower case, extra bold, black, script letters for shampoo. Filed Sept. 26, 1945 by Pennex Products Co., Pittsburgh, Pa. Claims use since May, 1926.

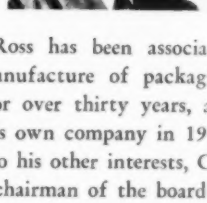
L-P-C—This in upper case, shadow letters for insecticides. Filed Nov. 9, 1945 by Laboratory Products Corp., New York. Claims use since Oct. 29, 1945.

RHOTHANE—This in upper case, bold letters for insecticides and disinfectants. Filed Nov. 13, 1945 by

(*Turn to Page* 201)







Plant of A. H. Ross Co. at Ludlow, Ky., recently acquired by Rockwell Mfg. Co., Pittsburgh. (Left) A. H. Ross, head of the Ross organization, now vice-president of the Rockwell packaging machinery division. (Right) Col. Willard F. Rockwell, president and chairman of the board of Rockwell Mfg. Co.

Rockwell Buys A. H. Ross

A. H. Ross Co., Ludlow, Ky., manufacturers of packaging machinery, has recently been purchased by the Rockwell Manufacturing Co., Pittsburgh. The company will continue to operate under the Ross name and will maintain its plant at Ludlow, Ky. Plans call for a considerable expansion of production. A. H. Ross will become vice-president and general manager of the packaging machinery division of Rockwell. The latter concern is headed by Col. Willard F. Rockwell.

Mr. Ross has been associated with the manufacture of packaging machinery for over thirty years, and established his own company in 1940. In addition to his other interests, Col. Rockwell is chairman of the board of the Timken Detroit Axle Co. and the Standard Steel Spring Co. During the war he served as director of production of the U. S. Maritime Commission, as a member of the executive committee of the Army and Navy Munitions Board, and on the requirements committee of the War Production Board.

BIDS AND AWARDS

N. Y. Navy Soap Bids

The following bids on various types of soap were received in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York: a.) 4,507 pounds of toilet soap paste, Cole Laboratories, Long Island City, N. Y., 14.25 cents per pound; Crystal Soap & Chemical Co., Philadelphia, 15 cents; Clifton Chemical Co., New York, 16 cents and R. M. Hollingshead Corp., Camden, N. J., 15 cents; b) 25,700 pounds of powdered hand soap, G. H. Packwood Mfg. Co., St. Louis, 11.694 cents a pound; and c.) 7,028 pounds of toilet soap, P. L. Badt Co., San Francisco, 10¼ cents, packaged; Pacific Coast Borax Co., Los Angeles, 10.825 cents a pound; Bond Sanitary Products Co., York, Pa., 11 cents and Carlton-Western Co., San Francisco, 15 cents.

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Army QMC Floor Wax Bids, Award

The following bids and awards were announced in a recent opening for miscellaneous supplies by the Army Quartermaster Corps, Atlanta, Ga., on 5,000 gallons of floor wax: Puritan Chemical Co., Atlanta, 98 cents a gallon; Oil Specialties & Refining Co., Brooklyn, 87 cents, accepted, and R. M. Hollingshead Corp., Camden, N. J., $1.316.

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Misc. Justice Dept. Bids

In a recent opening for miscellaneous supplies by the Department of Justice, Springfield, Mo., the following bids were received: six dozen tubes of toothpaste, Pepsodent Division, Lever Brothers Co., Chicago, 26.46 cents a tube, accepted; 12 dozen tubes of toothpaste, Be Vier Co., New York, $4.20; McKesson & Robbins, New York, $4 and Springfield Grocer Co., Springfield, Mo., $3.92, accepted; 1,200 bars of toilet soap, Lever Bros. Co., Cambridge, Mass., 5.88 cents, accepted. On an unspecified quantity of liquid soap for Tallahassee, Fla., the following bids were received: Crystal Soap and Chemical Co., Philadelphia, 49.5 cents; Rose Chemical Co., New York, 50 cents; West Disinfecting Co., Birmingham, Ala., 85 cents; R. M. Hollingshead Corp., Camden, N. J., 59 cents; U. S. Sanitary Specialties Corp., Chicago, 79 cents; Rochester Germicide Co., Rochester, N. Y., 64 cents; Clifton Chemical Co., New York, 65 cents and Wm. Messer Corp., New York, 76 cents.

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Panama Canal Bids

Among the bids received in a recent opening for miscellaneous supplies by the Panama Canal, Washington, D. C., were the following on an unspecified quantity of paste metal polish: A. L. Cahn & Sons, Brooklyn, $184; Joseph E. Frankle Co., Philadelphia, $145; R. M. Hollingshead Corp., Camden, N. J., $150; Imperial Products Co., Philadelphia, $120; Walter W. Miller Co., Indianapolis, $225; Oil Specialties & Refining Co., Brooklyn, $145 and Factory & Yard Supply Co., Brooklyn, $160.

The following bids were received in the same opening on an unspecified quantity of paste wax: A. L. Cahn & Sons, Brooklyn, $91; Joseph E. Frankle Co., Philadelphia, $70; R. M. Hollingshead Corp., Camden, N. J., $115; Oil Specialties Refining Co., Brooklyn, $65 and Factory & Yard Supply Co., Brooklyn, $76.50.

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Post Office Soap Bids

The following bids were received in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: on 4,200 pounds of cake grit soap, Unity Sanitary Supply Co., New York, 5.5 cents a pound; Eagle Soap Co., Brooklyn, 4.5 cents; Day & Frick, Philadelphia, 4.2 cents and Pioneer Soap Co., San Francisco, 7.5 cents; on item 1, 80 containers of approximately 50 pounds each of automobile soap; item 2, 15 half-barrels approximately 250 pounds each of automobile soap and item 3, 40 barrels of 500 pounds each of automobile soap, the following bids were received: Cole Laboratories, Long Island City, N. Y., item 1, 14.5 cents a pound; item 2, 12.5 cents a pound; and item 3, 11.5 cents; Crystal Soap & Chemical Co., Philadelphia, item 1, 16 cents; 2, 10.4 cents and 3, 9.5 cents; Trio Chemical Works, Brooklyn, item 1, 10 cents; 2, 8 cents; and 3, 8 cents; Harley Soap Co., Philadelphia, item 1, 10 cents 2, 9.5 cents; and 3, 9 cents; R. M. Hollingshead Corp., Camden, N. J., item 1, 12 cents; item 2, 11.5 cents and 3, 11 cents; Clifton Chemical Co., New York, item 1, 14 cents; 2, 13.5 cents and 3, 12.5 cents; Fischer Industries, Cincinnati, item 1, 6.9 cents; item 2, 6.5 cents and item 3, 5.93 cents and Schaeffer Bros. & Powell Mfg. Co., St. Louis, item 2, 6.8 cents and item 3, 6.2 cents.

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Misc. Treasury Dept. Bids

In a recent opening for miscellaneous supplies by the U. S. Treasury Department, Procurement Division, Washington, D. C., the following bids were received on: a.) 90 gallons of liquid furniture polish: Paragon Oil Co., Brooklyn, 97.5 cents; C. P. Baker & Co., Philadelphia, $1; Clifton Chemical Co., New York, $1.04; Cole Laboratories, Long Island City, N. Y., 55 cents; D. A. Collins Manufacturing Co., Brooklyn, 75 cents for 92 gallons; Daycon Products Co., Washington, $1.20; Alex. C. Fergusson Co., Philadelphia, $1.10; Joseph E. Frankle Co., Philadelphia, 90 cents; James Good Co., Philadelphia, 51.5 cents; Grace Manufacturing Co., Cincinnati, $2.11; R. M. Hollingshead Corp., Camden, N. J., 79 cents; Imperial Products Co., Philadelphia, 47 cents; Industrial Distributors, New York, 47 cents; International Metal Polish Co., Indianapolis, 80 cents; Liquid Veneer Corp., Buffalo, $1.64; Oil Specialties & Refining Co., Brooklyn, 47.7 cents; Penetone Co., Tenafly, N. J., 65 cents; Rex Sales Co., Philadelphia, 66 cents; Solarine Co., Baltimore, 60 cents; Solshine Manufacturing Co., Fall River, Mass., $1.50; Uncle Sam Chemical Co., New York, 76 cents and Welmaid Mfg. Corp., Chicago, 63 cents.

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GENUINE MONTANWAX

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RAW MATERIAL MARKETS

As of May 27, 1946

THE end of the paralyzing railroad strike after it had been in effect for two days brings temporary relief, at least, to manufacturers of soaps and sanitary chemicals, as well as to the rest of the U. S. industrial community. However, unless the coal strike is settled within the next few days, the settlement of the railroad strike won't go very far toward resumption of near-normal operations. The current supply situation boils down to an appraisal of the extent of the dependence of the soap and sanitary chemicals industries on the products of the coking operation. As this dependence is extensive, both directly and indirectly, the severity of the effects of a tie-up of bituminous coal production is obvious.

Even before the coal miners went out on strike, the steel industry had been shut down for a month by labor difficulties, so that the annual production of coal tar chemicals will have been cut down by an estimated 25 per cent before the year is over, according to informed sources. During the two weeks of the coal mine strike truce, weekly production of steel was reported at about 50 per cent of the corresponding weeks in 1945. Coal tar chemical production was cut by more than 50 per cent of normal during the two-week truce. Previously, during the week before the truce was effected, coal tar chemical production was about a third of normal. The cresols are just about unobtainable, while naphthalene continues to be very tight.

Nor is the fats and oils situation showing many signs of brightening in the near future. As a consequence, predictions are now being made that soap, and other products made from fats and oils will be less plentiful for the rest of this year and perhaps well into 1947. The black market is having its effect on soap output, too. Operators in meat black markets are continuing to make inroads on fat supplies. In addition, Government set-aside orders require about half of all lard and pork fat produced to meet world relief and export needs. The Government is now purchasing edible tallow for the first time since the start of the war, and has resumed buying rendered pork fat.

Another factor in the fats and oils picture is the almost complete elimination of supplies of soybean and cottonseed oil by war demands. The in-

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SYNTHETIC DETERGENT

(Alkyl Aryl Sulphonate)

(Low Alkalinity—High Percentage Active Ingredient)

Specific Gravity—One (Approximately 10 times as bulky as soda ash.)

Supply Not Affected by Government Order Restricting Fat Use

FOR FOAM-BULK-DETERGENCY

ALSO

Complete Line of High Quality Synthetic Detergents—Wetting Agents—Foaming Agents

EAVENSON CHEMICAL CO.

(Formerly SANDERS-EAVENSON CHEMICAL CO.)

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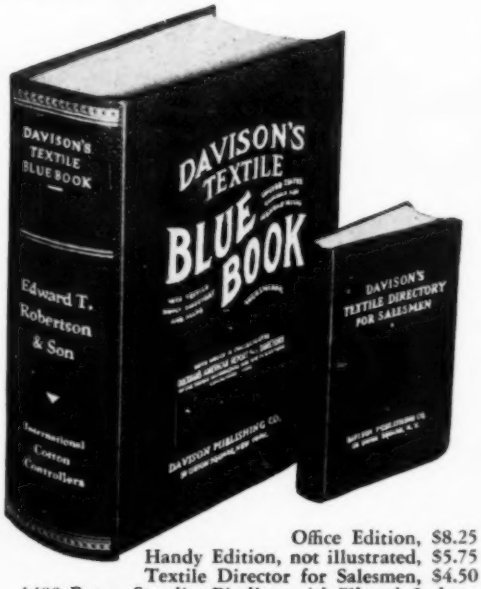
The large book in the office for circularizing, mailing, telephoning or reference, the small one for your salesmen or traveling executives, will pay their low cost in a few days!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dustry is limited by Government regulation to 88 per cent of its 1940-41 production rate. Market observers are reported to have said that the short supplies and limited production would be reflected on pantry shelves for months to come. At the same time the Bureau of the Census reported May 12 that cottonseed crushed in the nine months from Aug. 1 to April 30 totaled 3,061,791 tons, compared with 3,771,102 tons in the corresponding period in 1945. Cottonseed on hand at mills on April 30 totaled 240,561 tons, compared with 589,788 tons on the corresponding date a year ago.

Predicting that it will be five years before trade between the United States and the Philippines is restored to a pre-war normal, Luis Lopez Obieta, vice-president of the Bank of the Philippine Islands, Manila, recently stated that the Bell and Tydings bills just signed by President Truman will greatly facilitate trade between the U. S. and the Philippines. The Tydings bill provides funds for rehabilitation, while the Bell bill provides for free entry of Philippine merchandise into the U. S. until July 3, 1954. The principal obstacle to commerce in the islands at the present time, Mr. Lopez stated, is the lack of shipping facilities, warehouses, docks, steamers and roads. Rebuilding is making rapid progress with the assistance of the United States Army, and it is expected the situation will be largely corrected before the end of the year.

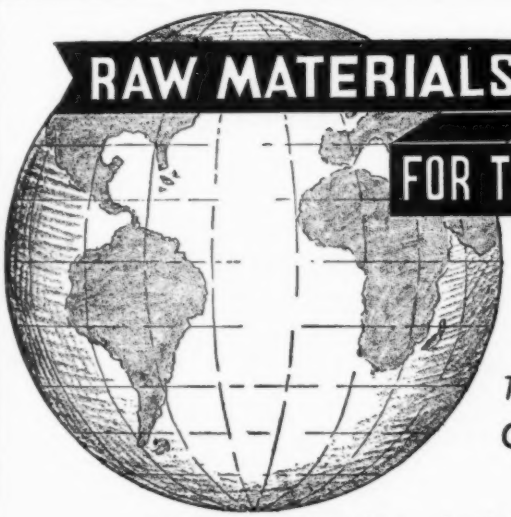
COPRA EXPORTS UP IN MAY

Copra exports from the Philippines for May amounted to 31,970 long tons, as against 24,179 long tons for April, according to figures released June 6 by Copra Export Management Co., Washington, D. C. Of the May total, 24,971 tons was shipped to the United States, with 1,860 tons going to Denmark and 5,139 tons to the Netherlands.

Wax-consuming industries suffered another stiff blow to their supply position with the announcement May 20 that a shipment of from 400 to 500 tons of carnauba wax was lost when the S. S. *West Point* struck a reef off Brazil and foundered. It could not be determined immediately whether any of the cargo had been salvaged.

The improved supply position of pyrethrum is reflected in a drop in the price of both the 20 and 30 per cent extracts, reported during the past month. The 30 to 1 extract is listed now in the vicinity of $10 a gallon as compared with an earlier quotation of $10.65. The 20 to 1 extract is now quoted in a $6.66-$6.75 range, as against a quotation listed earlier in the month in the $7.15-$7.25 range. Flower and powder prices remain unchanged. In addition to a large government stock-pile of pyrethrum, we are importing a good bit from the Belgian Congo under terms of an agreement signed during the war and which will run until 1947.

The essential oil outlook, characterized by no important changes during the past month, is thoroughly discussed on another page in this issue in a report of a symposium presented at the 11th annual meeting of the Toilet Goods Association.



RAW MATERIALS

COCOANUT OIL
VEGETABLE OIL FATTY ACIDS
ANIMAL AND FISH OIL FATTY ACIDS

FOR THE SOAP INDUSTRY

FROM ALL PARTS OF THE WORLD

THE LAMEPONS — Unique surface active agents for cosmetic and industrial use
QUADRAFOS — A stable polyphosphate for water conditioning and effective detergency

Castor Oil
Corn Oil
Cottonseed Oil
Olive Oil
Olive Oil Foots
Peanut Oil
Rapeseed Oil
Sesame Oil
Boric Acid
Modified Soda
Soya Bean Oil
Fatty Acids
Lard Oil
Neatsfoot Oil
Oleo Stearine
Stearic Acid
White Olein
Tallow
Grease
Lanolin
Caustic Soda
Soda Ash
Borax
Caustic Potash
Carbonate Potash
Sal Soda
Silicate Soda
Metasilicate
Tri Sodium Phosphate
Di Sodium Phosphate
Chlorphyll
Superfatting Agent
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Dry Alkali Mixtures

We compound your formulas. Let us handle this operation for you.

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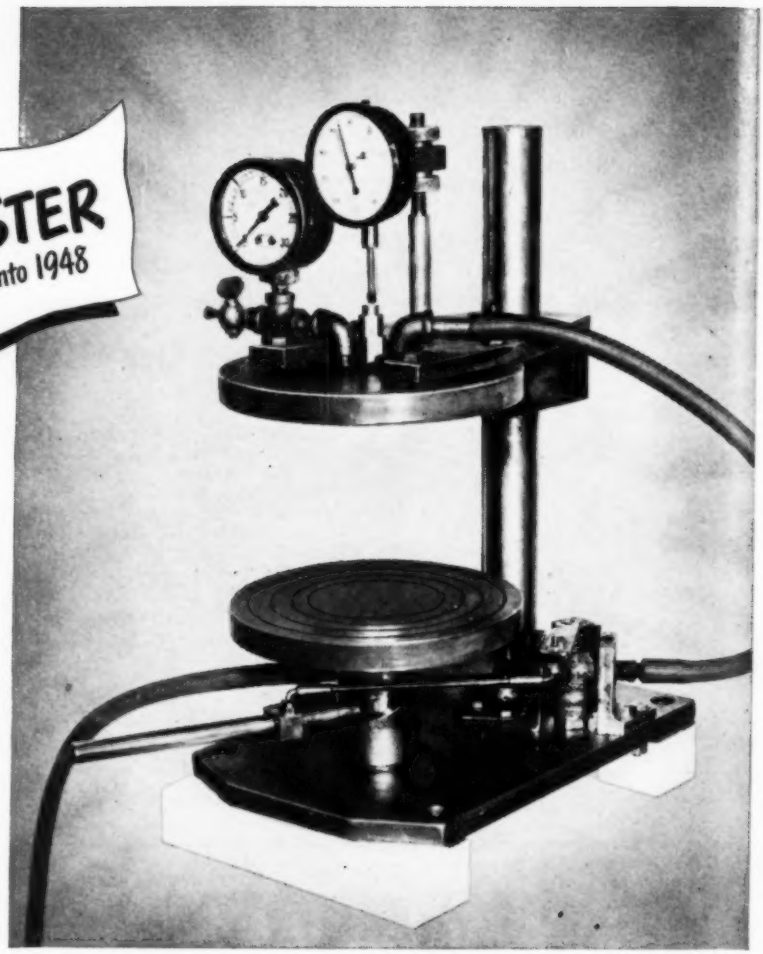
THE "FLIP" TESTER

An ingenious device for looking into 1948



The "flip" tester at American Can Research Laboratories in Maywood, Illinois, plays an important part in the quality-control of cans.

It predicts the corrosion resistance of various types of steel used in making cans and thus measures accurately can-life.

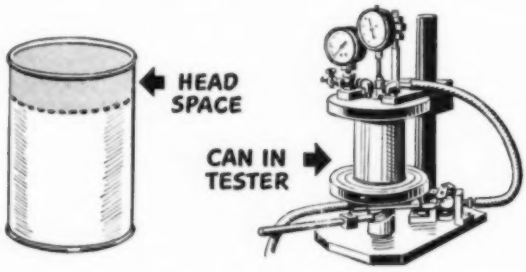
For instance, the "flip" tester tells us *today* how well a can will be holding its contents two years hence . . . in 1948 . . . or beyond.

At the beginning of the war—1942—our "flip" tester played an interesting and important *new* role. It predicted what the untried wartime plates would do before they actually did it.

So the Government knew, because we could tell them, that these wartime plates would hold the season's pack a reasonable length of time.

The "flip" tester is one of the simplest devices in the quality-control activities at Maywood. Enamels, sealing compounds, tin coatings, solder, and all stages of can manufacture are also subjected to tests more rigorous than they would get in actual use.

The purpose, of course, is to be sure that our customers get what they pay for—not "by and large"—but as close to 100 per cent perfection as possible.



HERE'S HOW "FLIP" TESTER MEASURES CORROSION

As corrosion in a can proceeds, hydrogen gas collects in head space, exerting pressure against can. "Flip" tester is applied to end, at regular intervals.

The amount of suction to "flip" can end out decreases as the gas is evolved. This measures the corrosion resistance of steel in question. Individual records are kept on each can, showing the decrease in "flip" action and the time.

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CANCO

No other container protects like the can

Study of Laundering Factors

INSOLUBLE flecks of soap and dirt are important sources of trouble in the laundry, and may be caused in several ways. If the water contains calcium or magnesium which has not been precipitated by water softeners, the dirty soap will be rendered insoluble and form soap-dirt specks. Since there is usually enough soap present in the sudsing operations to keep the insoluble soaps deflocculated, the soap specks do not appear in those operations but do show in the rinses.

If the temperature of the soap bath is allowed to rise much above the optimum, thinning out occurs. The temperature at which tallow soap functions best is approximately 70°C. (158°F.). Soap specks can be caused by a reduction in suspending power resulting from too high a temperature. Here again the trouble is more likely to occur in the rinses where only a small amount of soap is present. This particular type of soap speck can be avoided by using soap at its proper temperature and using enough soap operations to ensure removal of all the dirt before rinsing.

Similarly, under certain conditions the gray soap-dirt complex is precipitated in a fine dispersion, causing graying of the work. To maintain the proper whiteness, sufficient hypochlorite is usually used to bleach any gray soap-dirt deposit.

Action of Hypochlorite

Small amounts of hypochlorite at temperatures under 65°C. (149°F.) do not cause any undue amount of cellulose degradation in cotton. When relatively large amounts of hypochlorite are used at higher temperatures, considerable modification of the cellulose occurs. The resulting oxycellulose has much less resistance to the further oxidizing action of the hypochlorite than the original fabric. Much of the bleaching action is then used up on the fabric, leaving less for stain removal. This makes it difficult to cut down the quantity of hypochlorite when large amounts have previously been used, since such a reduction is usually apparent at once in reduced stain removal.

The modified cellulose formed by the action of hypochlorite adsorbs considerable alkalinity which is not readily removed by rinsing. If this alkalinity is not neutralized, on ironing, a yellow to brown compound will be formed which will destroy the whiteness of the work. This is one of the reasons for the use of a sour.

Hypochlorite acts more vigorously at pH 10 than at pH 11. However, it has been found that at pH 11, the bleaching action although slower, is more selective. Stains are attacked more readily because the bleach is not consumed by the oxycellulose in the fabric. Less tensile-strength loss occurs if the bleaching is carried out at pH 11 than if carried out at pH 10.

Some of the synthetic resins now used as finishing agents—for example the urea-formaldehyde type often used on shirtings—appear to react with chlorine in hypochlorite solutions to form chloramine compounds which do not rinse out of the fabric. During subsequent ironing, the chloramine compound decomposes to give hydrochloric acid, which in turn attacks the fabric severely. This trouble occurs only when bleaching and the subsequent operations are carried out at low temperatures. Higher temperatures decompose the chloramine compounds and no hydrochloric acid is produced on ironing.

Because of their catalytic action it is important to remove all copper and iron stains before fabric is subjected to washing and bleaching. Otherwise the life of the fabric will be shortened and holes may be formed.

Effect of Oil Stains

Oils such as cottonseed and corn cause oxidation of cotton fabric if allowed to remain on the fabric for some time before washing. The damaged cotton reacts to Fehling's solution and methylene blue tests in the

Effect of Corn Oil on Cotton

	Peroxide Value in millimols	*Tensile strength after removal of oil by washing, in lbs. per inch*
Original Oil	3.00	
Original Fabric	—	70.2
After exposure to light indoors		
No. of days		
3	26.1	68.2
7	57.6	67.7
11	306	61.8
14	773	59.5
18	693	48.2
21	553	48.0
25	405	46.2
28	355	43.5

A MESSAGE TO THE SOAP INDUSTRY

10 BIG ADVANTAGES OFFERED INDUSTRY IN THE "UNION PACIFIC WEST"

1. AVAILABILITY OF RAW MATERIALS
2. ADEQUATE SOURCES OF POWER
3. OPPORTUNITY FOR DECENTRALIZATION
4. NON-RESTRICTIVE LEGISLATION
5. LARGELY NATIVE-BORN LABOR AVAILABLE
6. HEALTHY LIVING CONDITIONS
7. GOOD SCHOOLS
8. GROWING CONSUMER MARKETS
9. INCREASING INDUSTRIAL DEVELOPMENT
10. FAVORABLE DISTRIBUTION FACILITIES*

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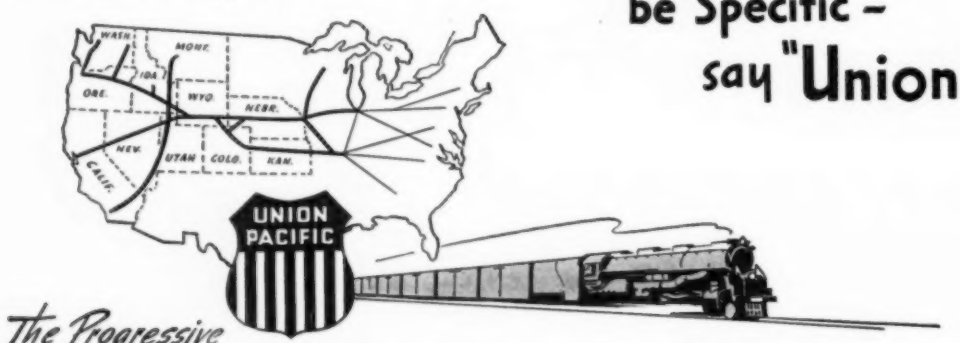

The Progressive

UNION PACIFIC RAILROAD

The Strategic Middle Route

same way as the oxycellulose resulting from the over-bleaching of cotton. Laboratory studies indicate that the oil first increases its peroxide content without affecting the fabric greatly. But after the peroxide content has reached its peak, loss of tensile strength by the fabric proceeds with a simultaneous reduction of the peroxide content. Salad oils often cause holes in tablecloths when allowed to remain on them some time before washing. Experimental results to show this are shown in the accompanying table (see previous page).

In certain cases where oil stains resist removal by regular soap, solvent soaps may be used with good results. Sufficient soap must be present to have a good emulsifying action. R. A. Phair. *Colloid Chem.*, Vol. VI, 620-8 (1946).

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Studies with Oleates

Transparent aqueous systems of hexanolamine oleate were examined by x-ray diffraction over a range of concentration from 30 to 92 per cent soap. The results prove the presence of lamellar micelles in aqueous solutions of colloidal electrolytes. The long spacing increased approximately linearly over the range of systems studied, some of which were fluid and isotropic, others fluid and anisotropic, and others semi-solid and anisotropic. Throughout the aqueous systems the essential structure of the primary micelle appears to be maintained. The variations in properties are caused by changing relations in these micelles to each other. S. Ross and J. W. McBain. *J. Am. Chem. Soc.* 68, 296-9 (1946).

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Liquid Detergent

A new liquid detergent called Dianol G is offered by the Quaker Chemical Products Corp., Philadelphia. When used with builders such as tetrasodium pyrophosphate, it is said to be one of the most efficient synthetic detergents available, on an applied cost basis, for use on all fabrics. It is rated as outstanding for use on wool fabrics, which it scours very well without builders at a pH of about 9. It may be used with soap or soap-base detergents to improve detergency under conditions otherwise unfavorable to soap.

Surface-active Agents

The length and nature of the aliphatic group in a surface-active agent has an important bearing on the properties of the agent. In order to predict how a surface-active agent will perform, probably the best guide is to make a comparison between the properties of the agent and those of the corresponding soap, that is, the soap made from a fatty acid of the same chain length. This comparison is listed below with respect to surface-active agents prepared by sulfating normal primary alcohols derived from fatty acids and soaps prepared by saponifying the corresponding fatty acids.

Soaps

1. Sodium formate
2. Sodium acetate
3. Sodium propionate
4. Sodium butyrate
5. Sodium valerate
6. Sodium caproate
7. Sodium caprylate
8. Sodium caprate
9. Sodium laurate
10. Sodium myristate
11. Sodium palmitate
12. Sodium stearate

Sodium Alkyl Sulfates

1. Sodium methyl sulfate
2. Sodium ethyl sulfate
3. Sodium propyl sulfate
4. Sodium butyl sulfate
5. Sodium amyl sulfate
6. Sodium hexyl sulfate
7. Sodium capryl sulfate
8. Sodium decyl sulfate
9. Sodium lauryl sulfate
10. Sodium myristyl sulfate
11. Sodium cetyl sulfate
12. Sodium stearyl sulfate

In both series, compounds 1 through 6 are dispersing agents when used in concentrated solution; 4 through 9 are solubilizing agents; 7 through 9 are wetting and foaming agents, and 9 through 12 are washing agents. In this classification, the effect of the carbon atoms in the aliphatic group must be defined in terms of unbroken carbon chains.

A large number of the commercially important surface-active agents have more than one aliphatic group. For example, diisopropyl naphthalene sulfonate is important commercially under a number of trade names, whereas the monopropyl naphthalene sulfonate has probably disappeared from the market. The dioctyl sulfosuccinate is another example of an important commercial product with two alkyl groups. Generally speaking, when the alkyl group is short, it is very beneficial to have more than one. If there is more than one group having 12 to 18 carbon atoms, the product generally loses its effectiveness as a detergent in aqueous solutions. Although there are many different types of solubilizing groups in commercial detergents, the sulfate and sulfonate groups are probably present in over 95 per cent of them. Other solubilizing group or groups may be present. Lawrence H. Flett. *Colloid Chem.* Vol. VI, 243-7 (1946).

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Soap Micelles

In rather concentrated soap solutions such as a 15 per cent solution of potassium laurate, x-ray diffraction photographs indicate the existence of double layers of soap molecules with water layers between them. In the double layers the hydrocarbon chains are oriented toward each other, with the polar groups toward the water. The micelles seem to be about four or somewhat more, double layers thick.

With an ordinary soap the polar groups constitute a negatively charged layer, while the water layer contains diffuse layers of positive ions. Presumably it is the interaction of these ions which gives a definite thickness to the water layer; repulsion between positive ions and attraction between positive and negative ions. This thickness is related to the amount of water in the soap solution. Wm. D. Harkins, R. W. Mattoon and M. L. Corrin. *J. Am. Chem. Soc.* 68, 220-8 (1946).

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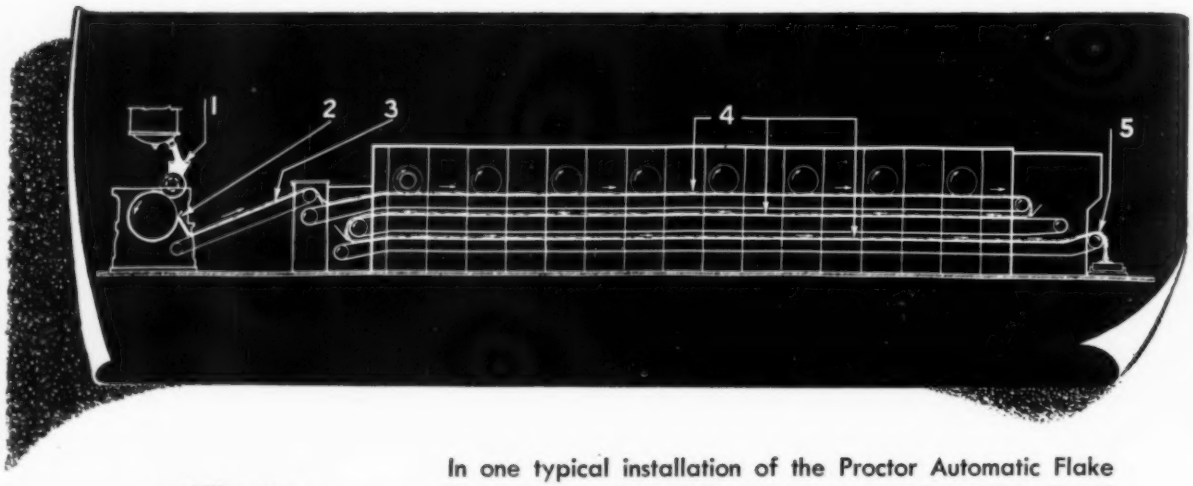
Making Hard Waxes

By heating amides of fatty acids such as stearic and palmitic, with formaldehyde, hard waxes are obtained which show fractures similar to carnauba wax. The preferred ratio is 6 parts of formaldehyde to 100 parts of amide. These waxes have melting points of 120-130° C., are soluble in hot benzine, turpentine, and solvent naphtha; the solutions set to smooth pastes on cooling. They are not affected by boiling water, are weather resistant, and can be dispersed in water to form stable emulsions. L. A. Stegemeyer, to Emery Ind. Inc. U. S. Patent No. 2,393,202.

LIQUID SOAP TO DRIED FLAKES IN 7 MINUTES . . .



1. Hot liquid soap, with moisture content of 30% (W.W.B.*) and temperature at 180°F., is discharged into hopper of chilling roll. Temperature of chilling roll averages 50°F...by means of this roll hot liquid soap is solidified preparatory to being made into ribbons.

2. Precision set needles cut solidified soap into ribbons 5/16" wide and 13/1000" thick.

3. Ribbons are carried by special conveyor and deposited on top conveyor of dryer.

4. Ribbons are carried along top conveyor through 8 units, then dropped to middle conveyor and returned toward feed end of machine and finally deposited on bottom conveyor and carried by this to the delivery end of the machine.

5. Soap with moisture content of 13.5% (C.D.W.†) is discharged from dryer seven minutes after entering main body. Output ranges from 3400-4800 lbs. (C.D.W.) per hour.

*Wet Weight Basis.
†Commercial Dry Weight.

In one typical installation of the Proctor Automatic Flake Soap System, dried flakes are being produced from liquid soap in a mere seven minutes. Every phase of the operation is automatic. What is more, every factor affecting flake thickness and drying is accurately controlled to assure flakes that are ideally suited to subsequent processing. Such a system, providing flakes that are of uniformly high quality, is, of course, the ideal link between preliminary and subsequent processing. The effect that this system has on that plant's overall production is obvious. Then, too, in addition to the speed with which flakes are produced, there is the matter of quality. The quality of the flakes produced by the dryer has a most important bearing on the quality of the finished soap. Since the Proctor system has proven itself time and time again for not only increasing production but for constantly maintaining superior quality in the flakes produced—it plays an important role in the all around efficient operation of any plant where it is in operation. Since efficiency in the plant is clearly reflected in the profit and loss statement, you cannot afford to ignore any possibility for increasing your plant's efficiency. Write today for details on the Proctor Automatic Flake Soap System.

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SOAP PERFUMES

WHILE many natural perfumes are used in scenting soap, synthetic perfumes. headed by ionone, a remarkable violet base, are playing an ever-increasing part in modern perfumery. When combined with natural perfumes, they form a valuable contribution. Both natural and synthetic perfumes fall into nine classes in terms of chemical constituents, as follows:

The Hydrocarbons

1. Among the aromatic hydrocarbons are two which are much used in the soap industry. The first is diphenyl methane with a powerful odor of geranium and orange. The second is bromostyrol or *alpha*-bromostyrolene, which is crudely reminiscent of hyacinths and which gives an excellent performance in soap. Of the whole series of terpenes, one of the most outstanding is limonene, present in a number of essential oils, up to 90 per cent in such fruits as lemons and oranges. Dipentene, which is only the reacemic form of limonene, exists in citronella, geranium, palmarosa and thyme oils.

The Alcohols

2. Alcohols are aliphatic, aromatic, terpenic and sesquiterpenic. Examples of these types include respectively: (a) geraniol, nerol, linalol, and citronellol, all with more or less of a rose odor; (b) phenyl ethyl alcohol, phenyl propyl alcohol, and cinnamic alcohol, the first with a rose odor, the latter two hyacinth; (c) terpineol, indispensable for all combinations with an odor of lily of the valley, and lilac; (d) sesquiterpenic alcohols such as santalol and vertiverol.

The Aldehydes

3. The aromatic aldehydes are the most important such as benzaldehyde, the principal constituents of bitter almonds, cinnamic aldehyde, vanillin and heliotropine.

The Ketones

4. Among the aliphatic ketones should be mentioned ethyl and methyl amyl ketones and methyl nonyl ketone. Aromatic ketones include methyl naphthyl ketone with its odor of orange flowers, methyl acetophenone, ionone, far and away the most important, and methyl ionone, all excellent in soap perfumes.

Acids

5. Few of these are used but mention should be made of benzoic acid, phenyl acetic, and cinnamic.

Lactones

6. Chemically these are internal aldehydes. The most important is the lactone of coumaric acid, known as coumarin, indispensable as a base for all compositions of chypre, fern, and heather types.

Esters

7. Many esters are used, the more important being geranyl acetate, linalyl acetate, benzyl acetate, rhodinyl acetate, styrallyl acetate, and methyl anthranilate.

Phenols and Phenol Ethers

8. Although eugenol and isoeugenol are affected by light, their methyl and benzyl ethers are not. The ethyl and methyl ethers of *para*cresol and *beta*-naphthol are of great importance in perfuming soap. Some of the phenolic compounds exert a stabilizing influence on the soap itself.

Nitrogenous Compounds

9. Artificial musks, indol, skatol, etc. are among these.

Fixatives

Fixatives fall into four classes; (a) Animal substances having very persistent perfumes such as civet, ambergris and musk; (b) resins and balsams such as benzoin, orris, labdanum, oakmoss, styrax, vanilla, Tolu and Peru balsams; (c) crystalline synthetic products such as artificial musk, heliotropin, coumarin, hydromethyl quinoline, cinnamic alcohol, benzoic acid etc. and (d) By-products in the manufacture of natural and synthetic perfumes such as flower waxes, ionone waxes, waste from distillation, and certain synthetic substances, the most striking of which is arosol, an excellent fixative with a sweet and balsamic fragrance.

It is difficult to give an explanation of fixing perfumes. The action may be purely physical. The fixative being as a rule a somewhat viscous liquid, it may surround the molecules of the other essential oils with less volatile constituents and therefore more persistent ones. The fixative thus slows down evaporation. To create a perfume is to solve a problem of a composite nature. There is the top note, the constancy of the final note, and the stabilization of the whole aroma. In all of this the part played by the fixative is no small one. Marcel Loir. *Soap, Perfumery & Cosmetics* 19, 210-14, 216 (1946).

Soap in Textile Processing

Soap has an important role in textile processing, particularly in connection with dyeing and printing. Its effective use requires care and control of variables. Rinsing after desizing often is not sufficient for thorough removal of impurities. In some processes care must be taken to avoid the formation of insoluble soaps. Residual calcium salts from previous boiling with milk of lime or from calcium hypochlorite bleaching liquors may cause trouble if not thoroughly removed by sours, antichlors, and rinses, prior to soaping.

The levelling action of soap judiciously applied in various fields of dyeing, has proved valuable in numerous ways. In both dyeing and printing soap enhances penetration of the fabric and yarn by the dyes and printing colors. Brightening and clearing of colors has been one of the chief objectives of soaping. In the production of madder and Turkey reds, it was found that the brightening and clearing action of soap liquors was due first to the solvent action of the soap on impurities in the color lake, and second to the fact that some of the fatty matter of the soap united with the color lake to give a color much faster to light and washing than would be obtained without soaping. T. N. Patrick. *Textile World* 96, No. 3, 151, 220, 224 (1946).

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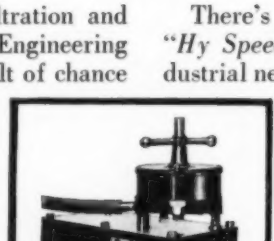

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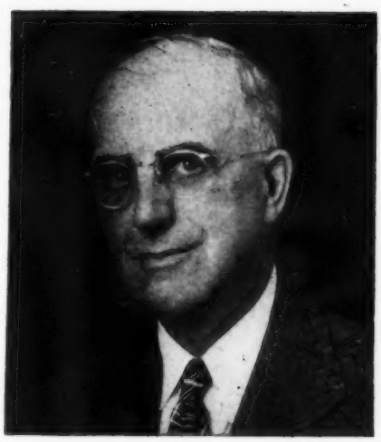
PRODUCTION *Clinic*

By DR. E. G. THOMSSEN, PH.D

A GOOD many years ago, when the writer was a beginner in the manufacturing business, a senior in the business world gave us some very good advice. He impressed upon us this adage:—"It seldom pays to be too original."

It is a common trait of youthful restlessness to rush into a predicament from which it may not be too easy to escape. As one grows in experience, greater wariness is exercised. Yet it is surprising to find numerous cases where even experienced persons will take a plunge without due consideration. What we have in mind at the moment are numerous examples of careless exploitation of new products that have come on the market during the past few years. The urge to beat the other fellow to the gun has not resulted generally in the consumer acceptance expected for such new products. Undue haste in getting many of these new articles to market without proper testing, aging to prove their shelf life and proper directions as to their use, has been disastrous in certain cases. Instead of creating a favorable consumer acceptance for several improved worthy new sanitary chemicals, prejudices have been built up against them that will not be easy to overcome. Then too, some of the finished products are certain to be returned for credit by the retailers because they have not stood the test of serviceability upon his shelves.

During the past year we have had the opportunity of observing several of the items referred to under the rather severe conditions which prevail in the South, even in the Winter time. These, however, are not comparable



to the warm days that are ahead, especially in the Midwest, during the Summer months. Heat, cold, light, age and humidity changes are the usual conditions that cause deterioration of products. Certain other changes like those due to oxidation, impurities or incompatibility of ingredients also often cause a product to deteriorate. Most of these conditions can be simulated under laboratory conditions, and accelerated tests to ascertain shelf life are quite feasible. But some of the imperfections of products on dealers' shelves make it quite evident that in many cases no tests or only hasty laboratory tests have been made.

The products noted include aerosol bombs, liquid insecticides, weed killers and disinfectants. The imperfections seem to occur unusually often. The products bear the names of some well known larger companies, though in most cases they are being distributed by smaller and in some instances little known companies. In practically every case the products are based on new ideas of application or new types of chemicals. The armed forces are given the credit for initiating the types of products marketed. The purveyors often stress the point that their wares have been used successfully for several years by these services, in promoting successful warfare or protecting the health of our soldiers, sailors and marines in the recent war. While we have heard of the successful use of certain of these items, we doubt very much that they would have passed Government specifications in their present imperfect form.

There is nothing more disheartening to the production end of a business than to have a product go bad, once it is in distribution. We all know however that such situations occur frequently. Because of this we are rather amazed that sufficient detail of testing a new product particularly, is not given utmost attention. From our examination of the products cited, it is very evident that many of them have been rushed upon the market without giving them all around consideration.

The rush to get DDT preparations on the market after V-J Day is still vivid in the minds of many of us. The harm this has done to the insecticide industry is difficult to estimate. It stands out as an example of what too great a hurry in putting out a new product can do. Even the sellers of the product advised caution, but their warnings have too often been disregarded. The result has been an unfavorable reaction among users, not only to the new DDT products but also toward insecticides generally. The same unfavorable impression is true of an aerosol bomb with a sticky valve, a weed killer that congeals in the bottle, or a floor wax that thickens, separates or smells bad. The producers of such hastily conceived and improperly tested new items not only harm their own name but stir up prejudices toward the entire field of sanitary chemicals. Another point of importance is the attitude of the regulatory officials toward these inferior products. Consumers do not always take it on the chin, but complain to the State and Federal authorities when such defective items fall into their

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hands. More stringent regulations or legislation are often the result, penalizing the manufacturers of satisfactory products as well as the maker of an inferior article.

The testing of old and new products is rightfully a function of the production end of a business. Even when pressure is exerted by sales or executive departments to hurry an untried, improperly tested product on the market, it pays to stand one's ground. Even the simplest of preparations may turn out to be a bad actor on the dealer's shelf or in the consumer's hands. Proper testing for shelf life and, if possible, distribution in controlled, localized territories is a prudent policy. It may result in one being termed an "old fogey" or "slow poke." In the long run, however, such a policy is the safest one to follow. The old adage "It seldom pays to be too original" is a good one to adopt in promoting a new, untried product.

Oil and Fat Refining

We have read a short circular issued by Filtrol Corporation, Los Angeles 14, Calif., with considerable interest. This company has installed a complete, coordinated, experimental plant for the continuous bleaching of oils and fats under the same conditions found under commercial production. Temperature, vacuum, speed of agitation, steam pressure, filtration rate and other conditions can be regulated within close limits. While operating conditions can also be regulated closely, they may be varied within wide limits to permit experiments involving extremes. This flexibility permits the plant to operate so as to simulate existing manufacturing conditions or to create new, desirable operating variations. This plant is operated by fat bleaching experts who are constantly adding to the knowledge of oil refining and bleaching operations so as to help customers manufacture improved products under better operating conditions. This experimental background helps Filtrol engineers to work out satisfactory answers for the handling of hard-to-bleach oils, fats and waxes.

Safety Siphon

Alden Speare's Sons Company of Cambridge, Mass., have sent us an announcement of their improved safety siphon, designed to draw acids safely from carboys and drums. A built-in pump primes the siphon. Then the contents of a carboy or drum may be emptied by the manipulation of a flow control either as a trickle or as a full stream. The siphon is constructed from a plastic that resists the action of acids, alcohol and other solvents. It may also be used to transfer other liquids besides acids.

Rapid Calculator

A new device of interest to chemists and other technical men was announced recently by The Slyd-Rule Company, Flushing, N. Y. It consists of a direct reading calculator in slide rule form to simplify computation of weights, measures, thermometer readings and formula conversions. It is of value for laboratory, plant and office use.

New Magnetic Separator

Eriez Manufacturing Company, of Erie, Penn., has developed a powerful, compact, non-electric magnetic separator with a working surface made entirely of stainless steel. Use is made of a powerful magnetic substance, "Alnico," which removes both minute and large iron and steel particles from such products as soaps, cosmetics and sanitary products. It may be installed at any point in the production line. The device may be built to fit all types of machines or conveyors. In many operations it is necessary to have such a protective device to prevent nails, nuts, bolts and even larger iron articles from entering pulverizing mills or other equipment. This company offers its advice on installation and will send Bulletin 102 Soc. to interested persons.

Glass Package Improvements

Improvements in bottles and other glass containers were brought quite forcibly to our attention recently. We were discussing screw caps and corks as closures and drifted into the question of glass packages. Few of us stop to realize the advances which have been made in standardization and durability of jars and bottles. A few years ago we had the experience of buying glass containers in the British Isles for quite an assortment of products. More than once did we wish that the British would tear a leaf out of the progress made by the Glass Container Association in the United States. The advances made in glassware manufacture in the U. S. A. in recent years have been tremendous. It does not put too big a strain on our memory to recall the days when quite a bit of confusion existed at home. We well remember the transition period when screw caps were replacing corks as closures and sizes were not yet standardized. It is not so long ago that it was not uncommon to have poor threads on bottles and poor caps to fit them. We recollect very vividly a case where it was necessary to break up a whole barge load of bottles because of poor or weak shoulders.

With these memories lingering, we read the advertisements of the glass companies in a recent issue of *Soap* with considerable interest. It was refreshing to note the confidence with which glass containers are now presented. Such features as the imperviousness of glass to chemical reaction, prevention of evaporation or absorption of moisture, ease of opening and resealing, myriads of styles and sizes to fit any condition, light weight with strength, accuracy of capacity and modern beauty are forcibly stressed.

We are often too apt to take such improvements for granted. They don't just happen, but represent much thought and research upon the part of the producers. When one considers that many of these improvements were made under great stress, due to the necessity of taking on tremendously increased volume in the war years, the tasks accomplished in this field are all the more noteworthy.

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Evaluating Alkali Cleaners

Nielco Laboratories, 1632 W. Lafayette St., Detroit, has just issued the text of a suggested rapid method for evaluating the detergent efficiency of alkali cleaners. Copies of the folder are available.

—— ♦ ——

Who Makes "Vaccette" Cleaner?

One of the readers of *Soap & Sanitary Chemicals* is interested in locating the name and address of the firm selling "Vaccette" cleaner.

MAINTENANCE *pays dividends*

LEHMANN Equipment is built to "take it", however, even a battleship has to go into drydock for an overhaul occasionally. The war years were tough on heavy-duty machines. Extra shifts—overtime — the constant drive for peak production, often with inexperienced operators and with but little attention to minor adjustments and repairs — have all taken their toll.

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Analysis of Soap

A method for the complete analysis of soap is proposed. Alcoholic extraction leaves as a residue inorganic and organic builders which are listed. Extraction of the soap with a solution made by mixing a 10 per cent potassium chloride with 85 per cent alcohol in the ratio of 1:0.6 extracts soap and sulfonated detergents. This evaporated extract is acidified with dilute acid, extracted with ether, and the soap fatty acids are determined in the ether extract.

The aqueous residue from the extraction is neutralized, evaporated to dryness, and extracted with alcohol to determine the alkali salts of sulfonates. Another sample of the soap is extracted with ether. The extract contains free fatty acids and unsaponifiable and unsaponified material. The free fatty acids in the extract are titrated with standard potassium hydroxide. The soap formed can be extracted with alcoholic potassium hydroxide solution. A subsequent extraction with petroleum ether collects the unsaponifiable and unsaponified material. This is saponified and a separation of soap and unsaponifiable is repeated. A. Parisot. *Inst. tech. etudes recherches corps gras,* 1944, 16 pp.; through *Chem. Abs.*

◆

Conjugated Unsaturated Fats

An unconjugated fatty material containing two or more double bonds is saponified with up to 25 per cent of excess alkali at 285-350°C. in an inert atmosphere with water substantially absent. The product is acidified and esterified with an alcohol. For example 200 parts of cottonseed oil are saponified with 33 parts of caustic soda in an agitated reaction vessel with the temperature brought to 260°C. Nitrogen is passed through the mixture and the temperature raised rapidly to 290-300°C. and held there for one hour.

Glycerine and unsaponifiable matter are removed as vapors. The molten reaction mass is pumped to another tank and dissolved in water. The soap is acidulated with sulfuric acid and the free fatty acids recovered. The product has a maleic anhydride number of 12.5, as compared with 1.1 for the original. H. G. Kirschenbauer, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,389,260.

◆

Saponification Number

A double-indicator method is described for the determination of the saponification equivalent with 5-100 milligram samples for saponification equivalents from 100 to 1000. D. Ketchum. *Ind. Eng. Chem., Anal. Ed.* 18, 273-4 (1946).

◆

Cracking of Soaps

Cracking in soap seems to be an ever-present problem in some localities, difficult to adjust and prevent in spite of alterations in the composition of the soap. This cracking can be minimized to such an extent that only horizontal lines appear within the body of the cake of milled soap after it has been in use for some time, without actual fracture of the soap. In certain Indian and French toilet soaps a specified amount of potassium soap is added to promote lathering and to reduce the cracking tendency. A special proportion of higher-and lower-melting fatty acids is also needed. The average fatty-acid composition of fat stocks commonly used in India is useful in this connection, and is shown in the table. The percentage of oleic, linoleic and other lower acids should not be below 50 if cracking is to be controlled. The desirable percentages is 50-60.

The length, the angle and the tapering of the cone of the plodder and the size of the mouth piece influence cracking. A sieve-plate with rectangular holes instead of round will help to reduce cracking. It is assumed that the settled soap is free from salt and alkali or rather within the allowed limits for toilet soaps. N. N. Godbole and J. S. Shukla. *Indian Soap J. II,* 138-40 (1945).

Oleic Acid Preparation

A product containing at least 95 per cent of oleic acid can be prepared from animal fats. In this process crystallization of the oletic acid itself is not required and therefore temperatures below −20°C. are not necessary, an improvement over previous processes. By this method the fatty acids obtained by hydrolysis of inedible tallow or grease which has been selectively hydrogenated until its content of polyunsaturates is less than 1 per cent, are crystallized from acetone at 0° to −20°C. These acids, which amount to about 50 per cent of the starting material, are equivalent to double- or triple-pressed stearic acid.

The liquid acids obtained from the filtrate usually contain 90 per cent oleic acid, and when fractionally distilled yield a product containing at least 95 per cent oleic acid. The purified oleic acid is odorless, and colorless to pale yellow. D. Sivern, J. T. Scanlan and E. T. Roe. *Oil & Soap* 23, 128-31 (1946).

◆

Titration Indicators

For titration in 95 per cent alcohol, thymolphthalein is a suitable indicator for fatty, brominated fatty, abietic, and boric acids and their ammonium salts; thymol blue for soap, abietic, and boric acids and their ammonium salts; phenolphthalein for boric acid; and bromophenol blue for ammonium hydroxide and triethanolamine. The volumetric determination of fatty acids in soap, when dissolved in alcohol, was much more rapid than by common methods. Since the yellow color of most soap solutions would mask the end point of thymol blue, the titration is made in the reverse; excess alcoholic hydrochloric added and the warmed mixture titrated with alcoholic potassium hydroxide. Wolff. *Ind. corps* 1, 36-9.

Fat or Oil	*% of Palmitic and Stearic Acids*	*% of Oleic and Linoleic Acids*	*% of Myristic and Lauric Acids*	*% of Other Lower Acids*
Tallow	49-57	44-45		
Palm oil	43-47	56-60		
Mahua oil	34-36	63-66		
Olive oil	9-14	73-94		
Peanut oil	10-15	59-80		
Sesame oil	12-16	75-80		
Coconut oil	5-10	3-10	Myristic 16-20 Lauric 50	20
Lard	40	60		

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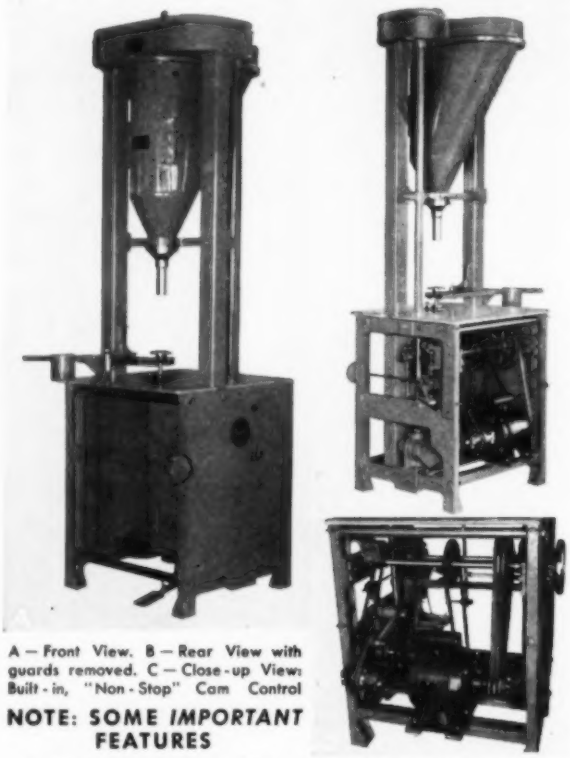

A — Front View. B — Rear View with guards removed. C — Close-up View: Built-in, "Non-Stop" Cam Control

NOTE: SOME *IMPORTANT* FEATURES

1. Heavier construction of critical parts.
2. Spur gear drive for auger and agitator shafts.
3. Enclosed bevel gear drive for clutch and vertical shafts.
4. Twin disc clutch (5 H.P. capacity).
5. Built-in "non-stop" cam control.
6. Hopper attached to frame with gasket, permitting easy removal.
7. Grease retaining collars for auger shafts.
8. Side operating rod—adjustable.
9. Double V-belt motor drive.

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PRODUCTS AND PROCESSES

Glossy Soap

A polished or glossy surface can be produced on soap before or after stamping by application of a treating liquid which consists of water or a mixture of water and lower alkyl alcohols of less than 6 carbon atoms, or acetone, and heating to a gloss. Dipping the soap into water at 175° F. is preferred. The length of time of treatment is not critical. J. W. Bodman, to Lever Brothers Co. U. S. Patent No. 2,392,831.

Washing Agent

A mixture of hydroxy alkylated amides of fatty acids, water-soluble salts of aliphatic chlorobenzylated aminosulfonic acids, alkaline inorganic salts, and the usual additions, is used as a compounded washing agent. A. Doser, to I. G. Farbenind. A.-G. German Patent No. 745,555.

Skin Cleanser

A skin cleanser for use under conditions where carbon black, graphite, or pigments are handled, comprises water-soluble polyglycol ethers consisting of fatty alcohols of at least 10 carbon atoms and of at least 6 glycol residues. Bohme Fettchemie-G.m.b.H. German Patent No. 745,244.

Alkyl Aryl Compounds

Mixtures of hydrocarbons containing preferably 12-16 carbon atoms such as kerosene fractions, are chlorinated to an extent greater than 100 per cent but not greater than 200 per cent. The resulting mixture of chlorinated hydrocarbons is treated with benzene in the presence of aluminum chloride. The benzene or substituted benzene is alkylated so that a single nonaromatic carbon atom of a hydrocarbon radical is linked directly to the benzene nucleus, and two carbon atoms in the benzene nucleus in the ortho-position are linked to two nonaromatic carbon atoms of the same hydrocarbon radical, thus forming a ring. These derivatives are then sulfonated. The resulting sulfonic acids and their salts are useful as detergents. L. H. Flett, to Allied Chem. & Dye Corp. U. S. Patent No. 2,393,526.

Oil Splitting

Of 4 methods of splitting, by sulfuric acid, by zinc chloride, by steam, or by simple heating at 130-140°C., the first and last are suitable. The heating process is preferred because it does not affect the constants of the oil except the Reichert-Meissl number. Combined heating and treating with steam gave 100 per cent splitting, heating alone gave 99 per cent. J. Gracian y Tous and G. A. Mendoza. *Ion* 5, 573-5; through *Chem. Abs.*

Cation-active Compounds

Cation-active compounds which foam readily and which wet wool, are prepared by treating a halogen-substituted aliphatic alcohol with a higher fatty acid or other fatty acid to produce an ester, and treating the ester with a primary or scondary polyamine. D. W. Jayne, Jr., and H. M. Day, to Am. Cyamamid Co. U. S. Patent No. 2,391,831.

Triethanolamine Shampoo

The following may be used to make a clear liquid shampoo which should require no filtering.

Coconut oil fatty acids	63 parts
Olein	27 parts
Triethanolamine	48 parts
Water	60 parts

The coconut oil fatty acids and olein are melted together and brought to about 50°C. (122°F). In another vessel the triethanolamine is gently heated with the water and then the fat mixture is added to it. After thorough mixing, reaction takes place quickly. When reaction seems complete, add 410 parts of water and mix well. The liquid should be clear, requiring no filtration. If the soap is not clear, add a little more triethanolamine and mix. A part of the water can be replaced by alcohol. Perfume is stirred into the soap after cooling. A second formula is as follows:

Olein	110 parts
Coconut oil fatty acids	80 parts
Triethanolamine	100 parts
Alcohol or half alcohol and half water	110 parts

Drug and Cosmetic Industry, 58, 445. (1946).

Dispersing Agents

Quaternary salts of heterocyclic compounds containing cyclic nitrogen substituted by a higher alkyl residue, are used as protective colloids, wetting and dispersing agents. H. Hunsdiecker and E. Vogt. German Patent No. 745,221.

Refining Vegetable Oils

By treating oil with an acid clay of pH 3-5, and subsequently with an alkaline clay of pH about 8, light colored, nonbreak oils are produced. If phosphatides are present, they are preferably removed after the acid clay treatment, P. L. Julian and H. T. Iveson, to Glidden Co. U. S. Patent No. 2,392,390.

Disinfectant Detergents

Mixtures of detergents and disinfectants contain betaines as the former, such as *N*-dodecylbetaine, and quaternary ammonium compounds as the latter, such as polyhexamethylene dimethyl ammonium bromide. J. E. Kirby and J. F. Lontz, to E. I. du Pont. U. S. Patent No. 2,388,614.

Avoidance of Splashing

To avoid splashing in the soap plant, transparent sheeting has been introduced in the form of curtains with openings where attention is needed. Preparations made from vinyl resin derivatives are very suitable for the purpose. Sheets of this material are mounted on simple frames installed between the unit and the attendant. Splashing from caustic liquors is avoided in this manner. *Perfumery & Essen. Oil Record* 36, 321-2 (1945).

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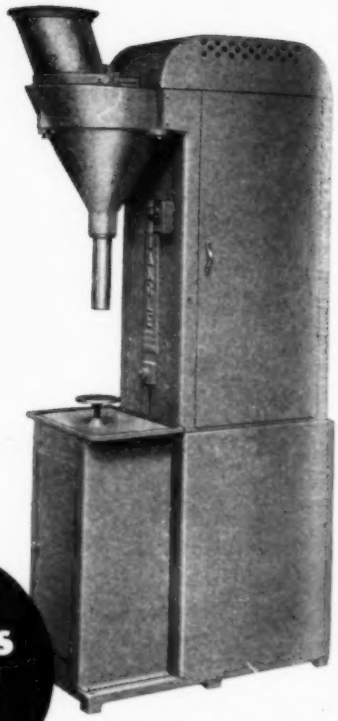
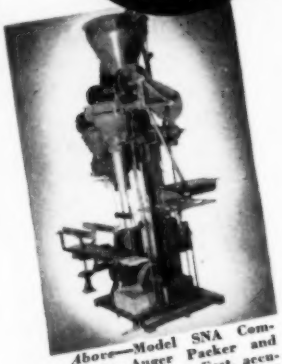


AUGER PACKERS 1 oz. to 50 lbs.

Above—Model U-1. One operator. Automatic filling device speeds production, reduces operator fatigue. 20 to 30 per minute. 1 oz. to 5 lbs.



Above—Model SNA Combination Auger Packer and Finishing Weigher. Fast, accurate. 2 to 25 lbs. Up to 16 packages per minute.

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Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,397,162, Manufacture of Soap, patented March 26, 1936 by Leopold Sender, Baltimore, Md., and Leo D. Jones, Philadelphia, Pa., assignors to The Sharples Corporation, Philadelphia, Pa., a corporation of Delaware. In the manufacture of soap by continuous saponification of fat, graining of the resulting soap and separation of grained soap from aqueous reagent solution by subsidence, the process comprising continuously passing a fat together with lye progressively through a succession of mixing compartments at a saponifying temperature, maintaining saponifying conditions in the respective compartments adapted to produce a saponified mixture in each compartment of which the proportion of the available fatty acid of the source of fat which has been saponified in outside of the range between 70 per cent and 85 per cent of said available fatty acid, said proportion of available fatty acid saponified in a compartment of the mixer at least one compartment upstream from the furthest downstream compartment being in excess of 85 per cent, introducing a further quantity of fat into a compartment in which dowstream from the compartment in which said 85 per cent of fatty acid saponification has first been attained, and controlling the saponification conditions in the compartment in which said further quantity of fat has been introduced and in any compartments of said mixer downsteam from said compartment of introduction to produce a saponified mixture in each of said compartments of which the proportion of available fatty acid of the source of fat which has been saponified is above 85 per cent, and subjecting the resulting mixture to centrifugation and thereby separating aqueous reagent from grained soap.

No. 2,397,732, Mildewproofing, patented April 2, 1946, by Kenneth M. Gaver, Columbus, Ohio, assignor, by mesne assignments, to The Ohio State University Research Foundation, Columbus, Ohio. As a new article of manufacture a mildewproofing agent comprising a non-alkali metal starchate in which the starchage anion is chemically bound to a salt of said non-alkali metal.

No. 2,397,767, Process for Making Copper Soaps, patented April 2, 1946 by James E. Taylor, Louisville, Ky., assignor to The Procter & Gamble Co., Ivorydale, Ohio. The improvement in processes for forming the cupric soap of a higher fatty acid, which comprises mixing said fatty acid with comminuted copper and blowing an excess of an oxygen-containing gas through said mixture while the latter is at a temperature between 125° C. and 245° C.

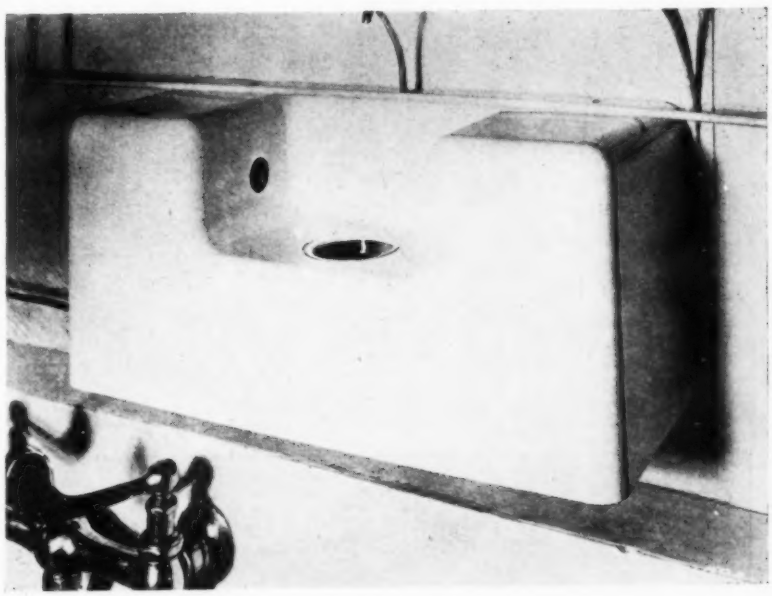
No. 2,398,173, Lithium Soap Greases, patented April 9, 1946 by Lawrence C. Brunstrum, Chicago, Ill., and Hubert J. Liehe, Hammond, Ind., assignors to Standard Oil Co., Chicago. A lithium soap grease comprising at least 5 per cent of a lithium soap, a major proportion of a hydrocarbon oil and between about 0.2 per cent and about 2 per cent of an unsulfurized ester of a polyhydric alcohol and an acid.

No. 2,398,242, Paint and Varnish Remover, patented April 9, 1946 by John D. Morgan, South Orange, and Russell E. Lowe, East Orange, N. J., assignors to Cities Service Oil Co., New York. A paint and varnish remover comprising a paste-like mix-

New Electronic Soap Dispenser

E. J. Scarry Co., Denver, Colo., has placed on the market a new electronic soap dispenser, designed primarily for surgeons and other hospital personnel. Resembling a small, rectangular cabinet, the dispenser has a recess in its top front, large enough to accommodate a person's hands and wrists. Across this recess a light beam is projected from one side to a photo-electric cell on the opposite side. When hands are placed in cupped position to receive soap from a spout above, they break the light beam and the electronic cell operates to eject soap from the spout.

Electronic equipment was supplied by the General Electric Co., which points out that all danger of contamination by touching the plunger is eliminated during the wash-up preceding an operation. The Scarry Company plans also to promote the device for use in theatres, hotels and other public buildings.



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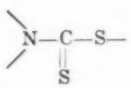
ture of about 12 per cent by weight of water, about 10 per cent by weight of monoethanolamine, about 13 per cent by weight of monoethanolamine oleate, about 10 per cent by weight of kerosene, about 36 per cent by weight of 1-nitropropane, and about 19 per cent by weight of isopropyl alcohol.

No. 2,398,295, Emulsions, patented April 9, 1946 by Albert K. Epstein and Morris Katzman, Chicago, assignors to The Emulsol Corp., Chicago. An emulsion containing oleaginous material, aqueous material, and small proportions of (1) an aliphatic polyhydroxy substance incompletely esterfied with a higher molecular weight fatty acid, and (2) a cation-active substance in the form of a salt of a nitrogenous compound in which an aliphatic hydrocarbon radical containing from 8 to 18 carbon atoms is directly attached to nitrogen.

No. 2,398,776, Process for Producing Aerated Soap, patented April 23, 1946 by John W. Bodman, Winchester, Mass., assignor to Lever Brothers Co., Cambridge, Mass. A process for producing an aerated, floating soap mass suitable for use in bar or cake form, having a compatible, gas uniformly dispersed throughout the mass in the form of microscopic cells or bubbles and suitable for producing a unique whiteness and opaqueness in an uncolored soap mass, comprising working a continuous soap mass in a pressure chamber while under pressure and in the presence of a compatible gas, uniformly distributing a material proportion of said gas throughout the soap mass in the form of microscopic cells or bubbles, controlling the temperature of said mass during said working so as to approach solidification and prevent migration and coalescence of said dispersed gas cells or bubbles within the mass, forcing said soap mass from said pressure chamber into a forming means while maintaining pressure thereon and maintaining said soap mass under pressure in said forming means while further cooling said mass.

Re 22,750, Disinfectant, patented April 30, 1946 by Wendell H. Tisdale, Wilmington, Del., and Ira Williams, Borger, Texas, assignors to E. I. du Pont de Nemours & Co., Wilmington. In a method of disinfecting for the control of bacteria, microbes, and fungi, the step comprising contacting the organism with a disinfectant comprising a derivative of dithiocarbamic acid which contains the group



No. 2,399,588, Method of Processing By-Product Soaps for Recovery of their Acids Free from Detrimental Alcohols, Etc., patented April 30, 1946 by Bonheur M. Weston and Frank F. Beall, Detroit, assignors to Aristo Corp., Detroit. The method of removing higher alcohols and other impurities from crude soap stock and recovering the saponifiable acid content thereof in purified form which comprises forming an aqueous emulsion and adding hydrochloric acid thereto in an amount sufficient to liberate the saponifiable acids and render the resulting mixture just acid to litmus after said emulsion has been broken, boiling said mixture while passing steam therethrough to break said emulsion and vaporize vaporizable compounds of said impurities and said hydrocloric acid from said mixture, continuing said boiling for a substantial period of time after breaking said emulsion while maintaining the mixture acid to litmus, discontinuing said boiling and separating the liberated saponifiable acids from the aqueous portion of the resulting mixture to remove water soluble compounds from said saponifiable acids.

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Bulletins on Furfural

The Quaker Oats Co. Chemicals Department, Board of Trade Bldg., Chicago, has recently issued two new bulletins dealing with furfural and its

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For additional information, write for Bulletin 146, "How to Evaluate Fatty Acids in Potash Soaps".

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NEO-FAT NEW FATTY ACIDS AND OILS ARMOUR AND COMPANY

derivatives. Chemical properties and principal reactions of furfural are discussed, and methods of analysis, vapor pressure curves, solubility data, etc., are listed.

Schimmel Appoints McGwier

Schimmel & Co., Inc., perfuming materials, New York, has just appointed Yates D. McGwier as its sales representative through the southwestern states. Mr. McGwier was until recently Major McGwier of the U. S. Army Air Forces with which he served in the South Pacific war theatre for three years. A native Texan, he attended Southern Methodist College. Prior to his four years in the service he had some thirteen years selling experience. He will make his headquarters in Dallas.

New Clorox Cleaner

Clorox Chemical Co. has announced a new liquid household cleaner, called "Boon."

WHC Opens Newark Plant

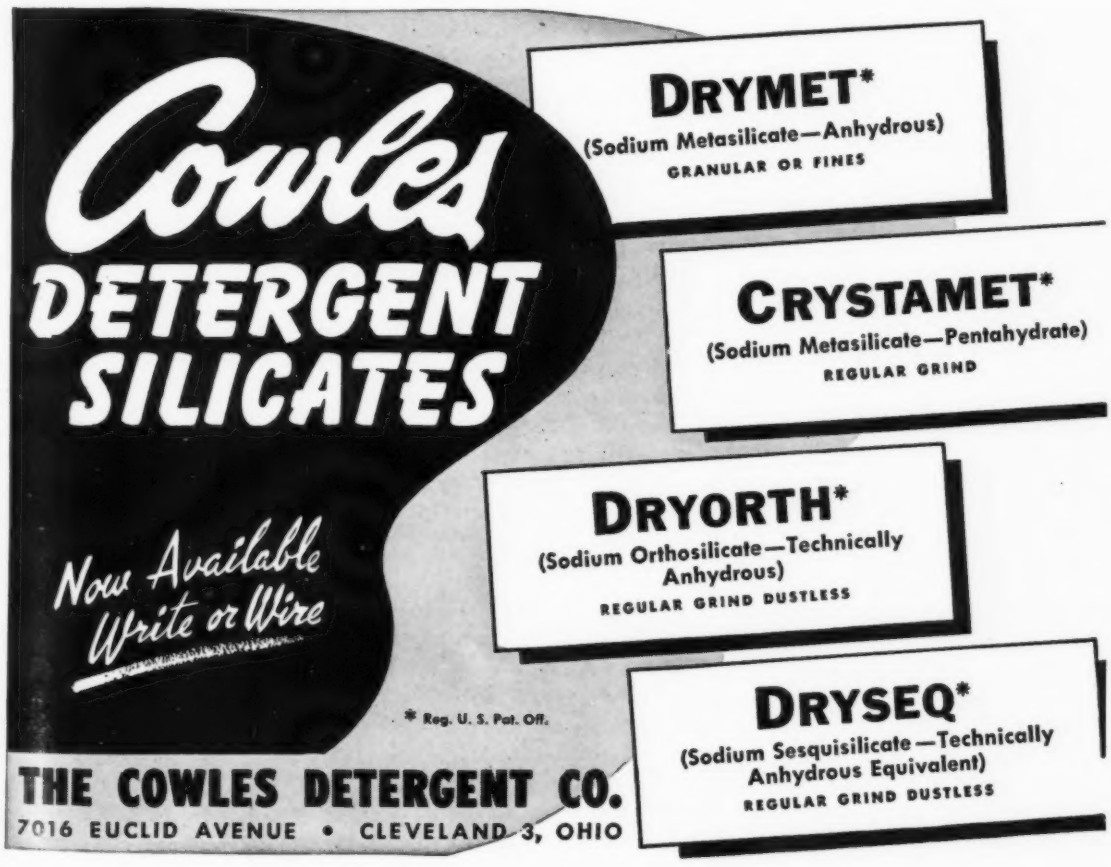
Welch Holme & Clark Company, New York, has recently taken over building No. 88 in the Calco Chemical Company's plant at 324 Wilson Avenue, Newark, N. J. This building has a siding on the Central Railroad of New Jersey, and all of the oils handled by Welch Holme & Clark Company will now be packed there, making possible improved and more rapid service, particularly to those customers in New Jersey. Welch Holme & Clark have also augmented their sales and office force recently by taking on four ex-servicemen.

Organize Cyclic Chem. Corp.

Cyclic Chemical Corporation, a new organization to manufacture and market organic and inorganic chemicals including such products as silica gel, zinc ammonium chloride fluxes, core oils, emulsifiers, wetting agents, and aromatic hydrocarbons, has been formed by Paul R. Eisenhuth and Wallace F. Helies, with offices at 75 E. Wacker Drive, Chicago. Plans are under way to establish offices in New York City and Washington, D. C. Mr. Eisenhuth was associated with Sherwin-Williams Co. for four years, Standard UltraMarine Co. for twelve years and the Chemicals Bureau of the War Production Board, Washington, D. C., for four years. Mr. Helies was associated with the Chemical Products Division of Standard Oil Co. of New Jersey for ten years. More recently both men were with Velsicol Corp.

Fat Salvage Figures

Fat salvage collections continued at a rate of approximately 350,000 lbs. per week during early May. This was a slight decline from the 364,000 lb. rate during April and the 406,000 lbs. rate for March, but no more of a decline than would normally be expected on a seasonal basis. Recent advertising copy ties in the fat salvage campaign with the need for alleviating world-wide famine conditions.



N. E. Chemical Club Elects

Election of officers and an address by Stanley Lovell, formerly director of research and development for the Office of Strategic Service, were the highlights of the annual meeting of the Chemical Club of New England, held recently at the Parker House, Boston. Forty-seven chemical companies of New England were represented, the following officers and executive board members were elected: president, A. A. Lawrence, manager of the Boston office of Dow Chemical Co.; vice-president, J. J. Krackeler, E. I. du Pont de Nemours & Co.; secretary, R. B. Anthony, Solvay Sales Corp.; treasurer, D. C. Knapp, Mitchell-Wing Co.; executive board for one year, D. J. O'Connell, Howe & French, Inc.; executive board member for two years, T. C. Jesdale, Monsanto Chemical Co., and executive board member for three years, A. C. Bates, American Cyanamid & Chemical Corp.

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Name Three to Givaudan Board

Three new members were elected to the board of directors of Givaudan-Delawanna, Inc., New York, at the annual stockholders' meeting, which was held in New York recently. The new directors are: Ralph M. Stevenson, who has been sales manager since 1935; Harold F. Duffy, who was elected treasurer at the stockholders' meeting, and who has been comptroller of the company since its organization; and Dr. Max Luthy, production manager, who has been with Givaudan since 1930. The company's directorate is now composed of Xavier Givaudan and Andre Givaudan, both of Geneva, Switzerland; Dr. Eric C. Kunz, president; Francis N. Banks, vice-president and counsel; and the three newly elected members.

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New Maas Catalog Issued

A new catalog containing information on phosphate chemicals manufactured by A. R. Maas Chemical Co., South Gate, Calif., is now available, the company announced recently. Among the products discussed are tetra-sodium pyrophosphate, trisodium phosphate and phosphoric acid. Sodium hyposulfite, a soap antioxidant, is also listed. Handy reference tables are also included. Copies are available from the company at 4570 Ardine St., South Gate, Calif.

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Group Sponsors Cosmetic Research

The Allied Drug and Cosmetic Association of Michigan announced last month that it would sponsor the establishment of a laboratory for cosmetic research at Wayne University, Detroit. The committee in charge of raising funds is headed by Donald Melville, president of Frank W. Kerr Co., Detroit.

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Three Join Milton Harris Assoc.

Three additions to the staff of Milton Harris Associates, Washington, D. C., consultants, were announced recently, by the company. Louis R. Mizell, formerly a chemist for the Textile Foundation and for three years a naval lieutenant and Howard H. Brandt, for eight years a chemist for Sharples Chemical Co., Philadelphia, have joined the organization as research associates. Louise L. Cox, formerly of the Navy Inspection Service, has joined the Milton Harris Associates staff as technical librarian.

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Owens Buys Kimble Glass

Proposed acquisition of the business and assets of Kimble Glass Co. by Owens-Illinois Glass Co. was approved recently by Judge F. L. Kloeb of the Federal District Court in Toledo. The plants of Kimble Glass are located at Vineland, Pleasantville and Camden, N. J., and Chicago Heights, Ill., Indianapolis, and Conshohocken, Pa. The operation of the acquired company, which has been active primarily in the manufacture of tubing and cane and the fabrication of products therefrom, will be continued as a subsidiary of Owens-Illinois Glass Co.

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Gourielli Announces Appointments

Beth Egan has been appointed director of publicity for Gourielli, Inc., New York, and Manka Bernard, sister of Helena Gourielli, has joined the firm, it was announced recently by Helena Gourielli, who left recently for a trip through Europe.

P.P.G. Buys Caustic Plant

Purchase of the large chlorine and caustic soda producing plant at Natrium, W. Va., by Pittsburgh Plate Glass Co., Pittsburgh, from the Reconstruction Finance Corporation was announced recently. The plant was built and operated by the company's Columbia Chemical division for the government's Defense Plant Corporation under a contract which included option to purchase. This option has now been exercised. Plans for the erection of the plant were rushed late in 1941 when critical shortages of chlorine and caustic soda threatened to block production of materials needed for the war. The plant, which first went into production in July, 1943, is situated on the Ohio River about 30 miles south of Wheeling. It is one of the largest chlorine producing plants ever built as a single unit east of the Mississippi River.

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George H. Suddard Dies

George H. Suddard, who up until the time of his retirement about three or four years ago was connected with A. C. Drury & Co., Chicago, died at his home in La Grange, Ill., April 24. A well known figure in the import and aromatic chemicals field, Mr. Suddard was an honorary member of the Chicago Drug and Chemical Association.

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Rheem Has London Office

Rheem Manufacturing Co., New York, makers of steel shipping containers and basic household appliances, announced recently that they are establishing London offices in conjunction with the extension of operations within the British empire. Lanning Roper, recently returned from service with the U. S. Navy as a lieutenant, is in charge of the London office.

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Penick Aromatic Catalog

S. B. Penick & Co., New York, has just issued a new catalog listing the products of the essential oils and aromatic chemicals division of the company, together with the perfume specialties of its Compagnie Duval division. Copies are available.

SANITARY PRODUCTS

A SECTION OF SOAP

MORE plentiful stocks of pyrethrum products on the American market are good news to insecticide manufacturers. For the first time in five years, there seems to be enough pyrethrum derivatives to go around. Prices continue high as a direct result of the high import costs of the flowers, expansion in production of which in Kenya was encouraged by a guarantee of increased prices to the growers. The guarantee of higher prices in Kenya was a war-time measure extending by arrangement through 1947. Without the price arrangement, pyrethrum growing would have dried up to small proportions. But it still leaves a hang-over of high import cost for America this year and next which may to an extent retard some expanded civilian uses. Nevertheless, reports indicate that pyrethrum is again going back into numerous products for the household insecticide field from which it has been absent for four years.

POLITICAL discussion has no place in the business or trade press. That has been a hard and fast rule around this establishment for well over twenty years. But times have changed, and things have come to the point where business and industry are inextricably enmeshed in the polictical whirlpool. Day after day, the present adminstration displays a growing hostility to industry which is nothing more than a reflection of political trends in Washington. Certain labor leaders evidently drunk with the power given to them by a vote-currying Congress, have been running wild on the bases. Chaos and confusion have resulted. And because this is a congressional election year, few are those members of Congress who have the guts to fight back. In the long run, business, industry and the general public will pay most of the bill,—and labor will kill the goose that lays its golden eggs.

Another year of present political ineptitude in Washington will find America well set for a neat little depression. We cannot kick overboard the results of all experience of the past century and hope to avoid the inevitable consequences. If Congress is peopled by too many yellow-bellies who are terrified at the mere mention of Lewis, Whitney and other labor leaders,—and the weakness of these legislators jeopardizes the future of industry,—then industry is justified in using every means at its command to rid them from Congress. Obviously, more men are needed in Congress who are interested in the welfare of the country and fewer whose chief interest is their re-election every two years.

EVEN though the strikes be over, especially steel, coal and rail strikes, the effects will be felt for many months among all coal-tar derivatives, according to authorities in the trade. Because chemicals of coal-tar origin are the starting point for thousands of other chemical products, including many disinfectant and insecticide materials, a cut in coking operations reaches into innumerable channels. Just as it takes time for the initial drop in coal-tar output to be felt by the ultimate user of disinfectants, DDT, and a host of secticide materials, a cut in coking operation of coke ovens will find a wide gap to be filled before conditions are again normal throughout the channels of manufacture and distribution of all chemical products which have any dependence on coal-tar. Thus, it is predicted that any improvement in supplies generally is at least several months away.

NAIDM MEETS...

Three-day meeting in session at French Lick, Ind.... Hears DDT Kettering report and other DDT toxicity papers.... Uniform insecticide laws, aerosol marketing, livestock sprays, floor finishes, quaternary ammonium disinfectants, germicide evaluation discussed.... Gothard deplores chaos in the industry.

WITH over three hundred representatives of the disinfectant, insecticide and sanitary products industry in attendance, the National Association of Insecticide & Disinfectant Manufacturers is holding its 32d annual mid-year meeting at the French Lick Springs Hotel, French Lick Springs, Indiana June 17, 18 and 19. Innumerable post-war problems with which the industry is faced are on the program for discussion. The opening session on Monday morning, June 17, heard the semi-annual reports of N. J. Gothard of the Sinclair Refining Co., NAIDM president, and H. W. Hamilton of the Koppers Company, secretary. Other speakers at the opening session included S. R. Newell, Assistant Director, Production and Marketing Administration, Department of Agriculture on "Uniform Insecticide Regulation," and R. E. Ditsler of Westinghouse Electric & Manufacturing Co. on "Aerosol Marketing." These were followed by an open forum discussion on various insecticide problems, a session of questions and answers.

The program for Monday afternoon, June 17, includes an address by Dr. Ray L. Cuff of the National Livestock Loss Prevention Board, Kansas City, on "Livestock Sprays." Dr. J. L. Svirbely, Industrial Hygiene Research Laboratory, U. S. Public Health Service, Bethesda, Md., is scheduled to talk on "Appraisal and Potential Danger of Petroleum Solvents With Special Reference to Particle Size." Dr. H. S. Telford of Dr. Hess & Clark, Inc., Ashland, Ohio, will speak on "Toxicity of DDT Sprays on Livestock." Dr. Victor Froelicher of the Geigy Company, New York, will speak on DDT toxicity based on facts given in "The Kettering Report." "A Synopsis of Experimental Work on the Toxicity of DDT" is the title of a paper to be presented by Dr. Paul A. Neal, Medical Director, and Dr. W. F. von Oettingen, Chief Industrial Toxicologist, Industrial Research Laboratory of the U. S. Public Health Service. Dr. Neal will give the paper.

"Requirements for Approval of Floor Finishes" is the title of an address to be given Tuesday morning, June 18, by E. C. Singler, secretary of the Maple Flooring Manufacturers' Association, Chicago. "Dry Cleaning Soaps" will be discussed by Alexander Fabry of Adco., Inc., Sedalia, Mo. Dr. Walter L. Mallman of Michigan State College will talk on "Cold Sanitization of Food Utensils." Dr. J. Vernon Steinle, Director of Research and Development for S. C. Johnson & Son, Inc., Racine, Wis. will report on German synthetic waxes under the title, "A Discussion of the T.I.I.C. Report No. 11173 on the Economic Study of German Synthetic Waxes." "Research Makes Jobs" will be the subject of an address by Dr. L. F. Livingston of E. I. duPont de Nemours & Co. "The Carnauba Wax Situation" will be the subject of a discussion to be led by Clarence L. Weirich of the C. B. Dolge Co., Westport, Conn.

Tuesday afternoon, June 18, will be given over to a sports program including a golf tournament in charge of Charles W. Furst of Furst-McNess Co., Freeport, Ill. and H. W. Jordan of the Federal Chemical Co., Indianapolis. Tuesday evening, an informal dinner will be held during which prizes for golf and horseshoe pitching will be awarded by Mr. Furst. A floor show will also be staged following dinner under the arrangement of Frank Nowland of the George H. Nowland Co., Cincinnati. Prizes for the sports program have been in charge of J. B. Magnus of Magnus, Mabee & Reynard, New York.

Final session of the meeting will be held on Wednesday morning, June 19, with subjects confined chiefly to disinfectant discussions. "The Nutrition of Microorganisms for Test Purposes" is a paper scheduled to be delivered by Dr. Carl E. Brewer, Chief Nutrition Branch, Army Service Forces, Frederick, Md. "Considerations in Evaluating Germicides" is the title of an address to be given by Dr. Paul A. Wolf of the Dow Chemical Co. "Evaluation of Quaternary Ammonium Compounds as Disinfectants" will be presented by Dr. Adrian Du Bois of Onyx Oil & Chemical Co. "Testing the Germicidal Activity of Quaternary Ammonium Compounds," a paper by Dr. Herbert Bernstein, Solomon Epstein, and Jack Wolf of the

CHARLES W. FURST
In Charge of Golf Tournament

C. L. WEIRICH
Arranged Details of Program

Emulsol Corp, will be given by Dr. Bernstein. The meeting will adjourn at approximately 12:30 p. m. on Wednesday.

The semi-annual reports of President Gothard and Secretary Hamilton follow:

President's Address

By N. J. GOTHARD

A YEAR ago, the war in Europe had ended but war in the Pacific was still going on. Today, we have peace, but a type of peace which finds us little better off than we were while the war was going on. Economically, the world is close to bankruptcy and still supporting huge military establishments. The post-war scramble for position is on. Uncertainty and doubt have come to replace the single purpose of the war, the defeat of a common enemy. With the end of the war, we felt that our greatest problems would be solved, but the war is over and we find these problems more numerous and more difficult of solution than ever.

If there is any single characteristic of the present outlook in disinfectants and insecticides which is outstanding, that characteristic is confusion, especially confusion in the minds of manufacturers and distributors. Very few of us seem to have a clear picture in our own minds of just what the next few years are likely to bring forth. Having been through four years of war which turned our industry topsy-turvy, which reduced supplies sharply or cut us off altogether from many of our raw materials, and which found us unable to meet normal civilian demand for our products, we are now for the first time since 1941 trying to get our feet back on the ground. We are in the aftermath of the chaos of war and it is not at all surprising that our industry should find itself in a state of confusion and uncertainty. In fact, practically every industry in America today is confused regarding the immediate future. Over the next ten years, industry will solve many of its basic problems and get back on an even keel—and this goes for our industry as well as others—but in the meantime, I believe that all of us are going to experience a headache in the readjustment process.

N. J. GOTHARD
N.A.I.D.M. President

The speed with which business and industry return to normal will in my opinion be determined to a great extent by the political situation, especially in Washington. The less government interferes with industry over the next few years, the sooner will our return to normal business conditions be completed. But if the government continues to try to legislate and regulate us into economic perfection and to attempt to solve economic problems by passing more laws, American industry may still find itself tied in a knot ten years hence.

Delay in reconversion, I feel, may be laid chiefly to two main causes, first, the wide series of strikes with which industry and business have been plagued for the better part of the past year and, second, interference by OPA regulations with resumption of normal production. By far the most serious of these where our industry is concerned, have been the steel and coal strikes. Drawing as we do so many of our important raw materials from coal tar, the effects of a reduction in both mining and coking of coal have seriously reduced the supply of many essential materials. In addition, the innumerable indirect effects have helped further to retard the normal flow of commerce.

The influence of OPA ceiling prices on a resumption of production of many items has been to interfere with reconversion. Whether the maximum price law should or should not be retained is beside the point. The fact remains that manufacturers cannot and will not produce goods at a loss. But, this is exactly the situation which they face when they attempt to produce and sell at ceiling prices when all costs have increased sharply. Because of this, we have had something akin to a manufacturers' strike. Output has been cut and many types of essential goods are simply not available. While buyers would gladly pay a higher price to get such goods, they too are prevented from doing so by price ceilings. The paralyzing effect on production of such a situation is quite apparent.

Although in some items, we are likely to see shortages continue for another year at least, and especially in

a few of the more important derivatives of coal-tar, it is my feeling that a switch from a seller's market to a buyer's market in many of our products is not too far off. In the market for household insecticides, there are those among our members who are none too optimistic about the coming season. They feel that stocks of finished insecticides in trade channels, not considering supplies of government surplus products, are more than ample for all needs this year and that competition is likely to be very keen unless demand is unusually heavy. On the other hand, our industry enters the 1946 season with the American public more insect conscious than ever before in history, which in itself may help to stimulate demand for our products.

The endeavors of your officers and board of governors to protect the interests of our members and in fact of the whole industry have been greater than ever. Just as the problems of individual firms have multiplied through the war period, those of this Association have multiplied also. To those members who have given freely of their time without honor, glory or any kind of remuneration to help solve these problems, we owe a debt of gratitude. In this connection, we are particularly indebted to our Secretary, Mr. H. W. Hamilton, and to the Chairman of our Legislative Committee, Mr. W. J. Zick. Both have contributed many many hours of their time to the affairs of our Association without hope of reward other than the knowledge of a good job well done. There are many others, particularly the chairman of our active committees, who have contributed freely of their time and effort. I should like to express my personal appreciation for the help of these men and I am sure that I express the feeling of all of us.

With our membership at the highest point since the founding of the Association in 1941, the radius of our influence has grown. Irrespective of what the next few years hold for our industry, a more closely cooperative and more active membership can do much to aid every member of NAIDM and the industry at large to avoid the pitfalls which may lie ahead of us. That is the job of this Association—to help you and your business. If you know a way which we can do it better, tell us!

Report of the Secretary

By H. W. HAMILTON

AT THE annual meeting of NAIDM last December, there was a spirit of great relief from the worries of a war just ended. There was much for which to be thankful. The future was promising. The destructive war of the past years we thought would now yield to a constructive future filled with opportunity. Unlimited possibilities were within the easy vision of all. New factories, new processes, new products, expanded markets were subjects for conversation at our December meeting.

Economic distortions began to appear almost immediately. The expansion plans rapidly changed to efforts to continue operations in the face of material shortages, labor problems, diminishing profits and some purchasing unrest.

The executive office of NAIDM has felt the full pressure of this complex period. The development of the office has been going forward. An additional member has been added to the regular staff. This has made possible more bulletins, and improved speed in their release. It is expected that we can improve this service even further. In all we have issued 74 bulletins, and numerous enclosures have been sent out with the bulletins.

NAIDM membership has increased to 193 active; 45 associate. The service given to individual members by telephone and correspondence is increasing. More meetings are being held at the office. More members are taking an active interest in the affairs of the association than ever before. All this indicates a healthy growth for our industry.

The problems confronting our industry are constantly increasing, and none of the old ones seem to reach final solution. It is a tribute to this group that it is always young enough to seek improvement and development. You will hear from many committees indicating these facts.

The insecticide standards must be studied in the light of new ingredients, and possible new standards for application to aerosol dispersion. New legislative acts and regulations are constantly giving cause for great concern, and your legislative committee deserves more support from each individual member. Disinfectants, floor waxes, and other products used in sanitation are changing because of research, thereby requiring new methods of testing, standardizing and evaluating. Each member as a part owner of this association must give some time, effort, and knowledge to the solution of these mutual problems.

There are many plans for the future. NAIDM is now of such a size that it must arrange its meetings much further ahead than ever before. You will hear of plans for the next two years. Larger offices are needed as soon as suitable space is available. A better bulletin service is planned. This bulletin service contemplates binders for each year. There are other plans. All will take time to develop. A comprehensive book of Federal and State laws pertinent to the membership of this association is being compiled. This will take several months to complete. With the willing help of every member when problems have arisen we have tried to carry on at the NAIDM office in accordance with the mandates of the executive committee, the board of governors and the association as a whole."

SPRAYERS...

for dispensing concentrated insecticides

By H. O. Schroeder and Arthur W. Lindquist[1]

Bureau of Entomology and Plant Quarantine, U.S.D.A.

THE conventional hand type sprayer has been a standard for dispersing household insecticide sprays for many years. These sprayers have appeared in various types of construction, and the degree of efficiency with which they function has been equally varied. Emphasis by manufacturers has generally been on constructing a sprayer at the lowest possible cost, and apparently no great effort has been made to perfect a unit of highest efficiency. For the dispersion of the dilute insecticides on the market, however, the ordinary sprayer has been fairly satisfactory because good results could generally be expected if large amounts of spray were discharged. Most hand sprayers have been cheaply made, easily damaged, and awkward to store when not in use, and many of them emit spray solution from the siphon tube with changes in temperature.

The liquefied-gas aerosol (Goodhue 1942) has given us an entirely new concept of insecticide dispersion. This type of aerosol is self-propelled, and is generally packaged in 1-pound metal containers which are indestructible and considerably more compact than the ordinary spray gun. The aerosol bomb has a wide appeal, not only because of its effectiveness but also because of the ease with which it can be used and the large amount of space that can be treated with a small amount of material. Aerosol dispensers produce an insecticidal mist in a highly effective par-

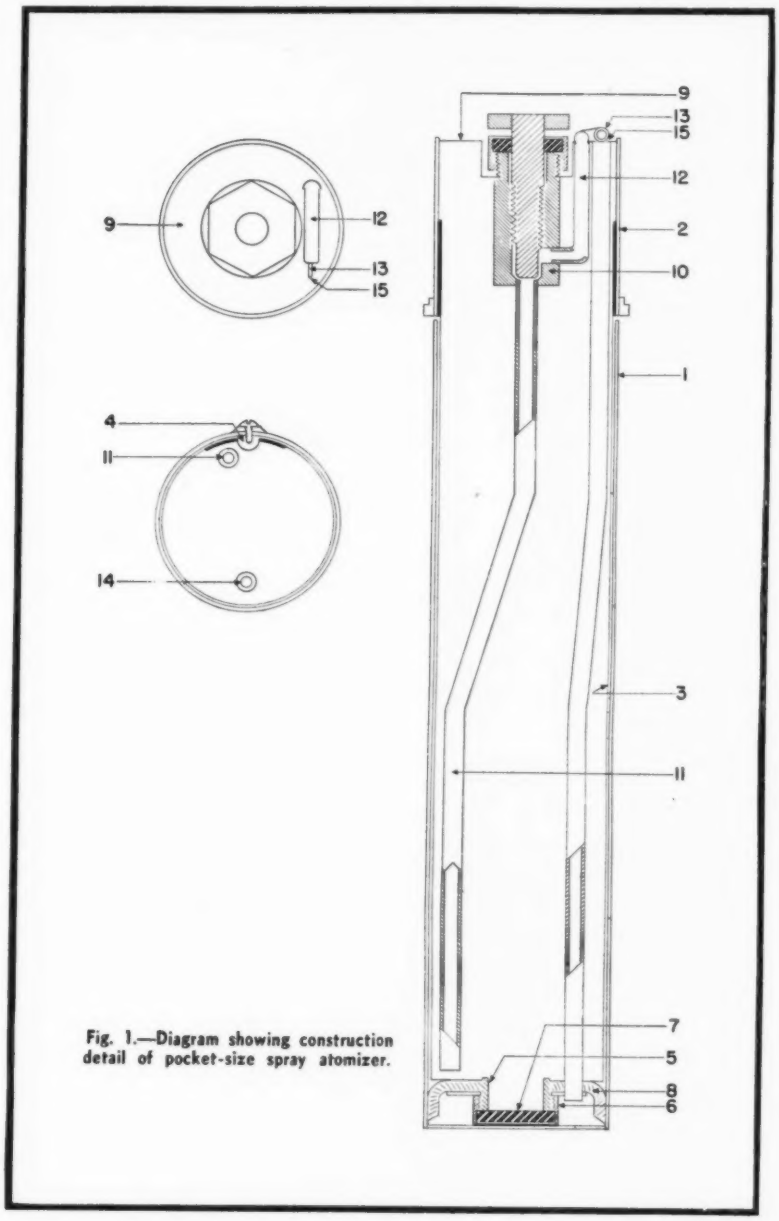

Fig. 1.—Diagram showing construction detail of pocket-size spray atomizer.

[1]This work was conducted under a transfer of funds, recommended by the Committee on Medical Research, from the Office of Scientific Research and Development to the Bureau of Entomology and Plant Quarantine.

[2]The authors acknowledge the advice and assistance of E. F. Knipling, in charge of the Orlando, Fla., laboratory.

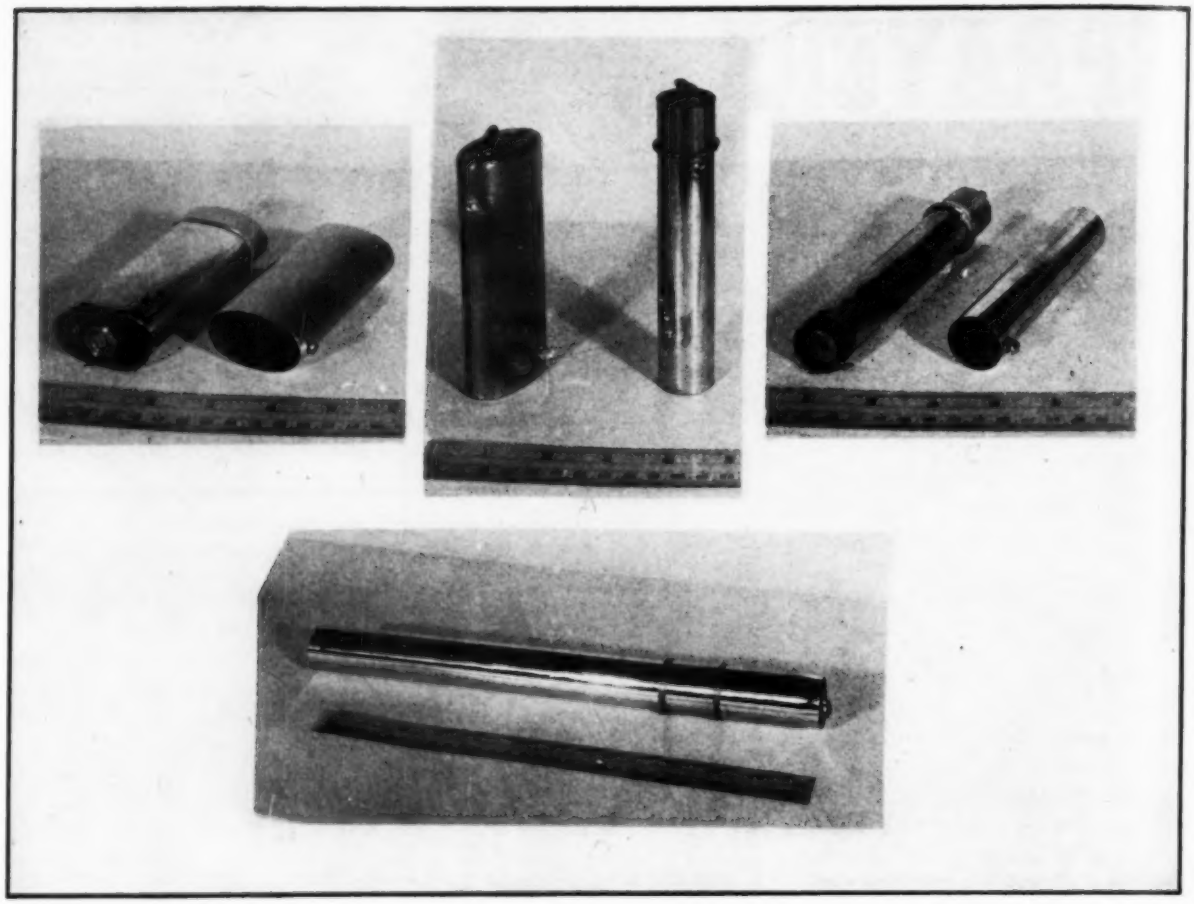

Fig. 2.—A, Oval pocket sprayer (4½ inches long, capacity 85 ml.) and a round-model pocket sprayer (1 by 5½ inches, capacity 50 ml.).
B, Oval sprayer dismantled.
C, Round sprayer dismantled.
D, Large household-size spray atomizer, 1¼ by 14 inches. Capacity 200 ml.

ticle-size range. Only 3 grams of total aerosol per 1,000 cubic feet are required for an effective dose. From 85 to 90 per cent of this amount is highly volatile gas and is lost immediately after discharge from the container. Therefore, the suspended aerosol particle contains the active principles in a highly concentrated form.

Lindquist, Schroeder, and Knipling (1945) reported that insecticide droplets of very high concentration could be produced and dispersed in the air by mechanical means. A solution containing 10 per cent of a toxicant was found to be essentially as effective as a 1 per cent solution, provided the amount of toxicant used was the same in each case and the spray was properly atomized.

The development of the concentrated spray to a practical point brought up the problem of designing equipment that would make possible wide application of the spray's advantages. In dispensing a highly concentrated spray it is of prime importance to get proper atomization to avoid loss of spray in heavy droplets. Knipe and Sitapathy (1942) produced a fine-mist spray by utilizing a capillary tube in a continuous-type hand sprayer. The paint-gun type of spray atomizer, when operated at an air pressure of 25 pounds, or more, per square inch, produces a satisfactory particle size. In work with hand sprayers it was found that any good hand sprayer could be converted into a satisfactory atomizer by reducing the size of the siphon-tube aperture to about 0.025 inch inside diameter. This was done by cutting off about ⅛ inch of the siphon tube and inserting a ⅜-inch length of capillary tubing and soldering it into position after proper adjustment. The efficiency of the sprayer can be further improved by reducing the size of the air vent in the pump to 0.040 inch. This increases the velocity of the air passing over the siphon tube by making it easier to build up pressure in the pump. Hand sprayers modified in this manner produce a fine mist and eliminate coarse droplets, which settle quickly to the floor. Such modifications would not be practical for use with ordinary weak sprays, because the delivery rate is not sufficient, but with concentrated sprays adequate delivery can be obtained with comparatively little effort. The settling rates of mists produced by sprayers having such modified siphon tubes and air vents, as well as their effectiveness against mosquitoes and houseflies, are reported in another paper (Lindquist *et al.*).

Because properly atomized concentrated sprays are highly effective, many thousands of cubic feet of space can be disinsecticized with midget sprayers designed to contain small amounts of liquid. The sprayer described below was developed in an effort to produce a portable model which could be carried conveniently in a pocket if necessary. It was thought that such a sprayer might be of considerable value as an item of individual issue to members of the armed forces under certain circumstances. It also seems possible that it should have many civilian uses, not only for dispersing concentrated sprays in the household, but by sportsmen, campers, and travelers in general. Numerous models of various sizes and shapes have been constructed, only one of which is described here (fig. 1). An oval and a round-model pocket sprayer and a large household-size spray atomizer are illustrated in figures 2 and 3.

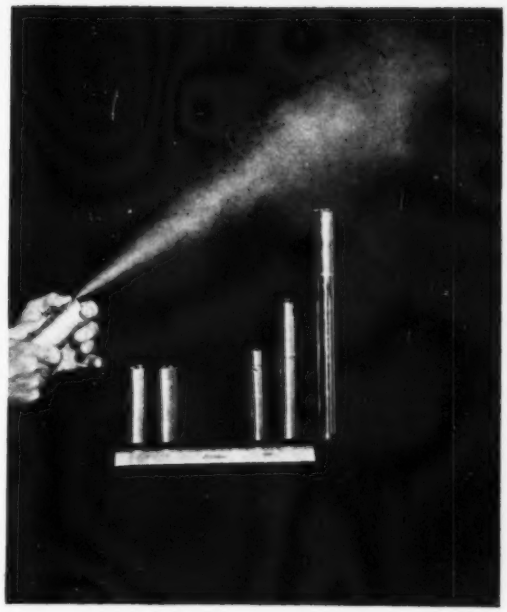

Fig. 3. — Several sprayers and the spray discharged by the oval pocket model.

THE sprayer consists of a cylindrical liquid tank with a leather compression cup fitted to one end. A compression cylinder closed at one end and slightly larger than the liquid tank slides back and forth over it to provide air pressure with each forward stroke. A small tube through the length of the tank delivers the compressed air over the orifice of the siphon tube at the forward end of the tank. A cut-off valve in the siphon tube prevents leakage when the sprayer is not in use, regardless of its position. This type of construction provides extreme compactness by utilizing the space inside the compression cylinder, and also provides a maximum volume of air for any particular size of sprayer. The spray liquid is replenished by removing a filler cap provided for this purpose in the center of the leather compression cup. This cap also serves to hold the leather cup in place. To prevent the outer cylinder from becoming disconnected while the sprayer is in use, a short screw near the open end of the cylinder rides in a groove in the tank.

Sprayers as small as ⅞ inch and as large as 1½ inches in diameter, and ranging in length from 4½ to 14 inches, have been made. It is not necessary that atomizers of this design be round. Short models oval in cross section, which fit more smoothly in a pocket, have been made, and they operate just as effectivly as the round ones.

The data in table 1 illustrate the great volume of space that can be treated with atomizers containing relatively small amounts of highly concentrated sprays. Small pocket atomizers are not suitable for treating large spaces, but average-size rooms in dwellings can be treated with ease.

Although many variations of the specifications given below are possible, certain requirements must be met in order to insure satisfactory and efficient operation of the sprayer. The nozzle should be properly adjusted, the action of the pump should be free and easy, the leather cup should be pliable and well oiled, and the tank and the spray solution should be clean.

A detailed description of the parts follows (numbers refer to parts indicated in fig. 1):

1. Compression cylinder: Brass seamless tubing closed at one end. Wall thickness 0.0165 inch. Length 4½ inches, outside diameter 1 inch. A small set screw is fitted 3/16 inch from the open end of the cylinder. The end of this screw rides in the groove provided for it in the tank and prevents the cylinder from becoming disconnected while the sprayer is in operation.

2. Sprayer case: Same material as part 1, ¾ inch long. The siphon tube and valve are fitted into plate closing front end. The liquid tank is soldered to inside of opposite end.

3. Liquid tank made of 30-gage tinned metal soldered to inside of sprayer case. The compression cylinder slides back and forth over this portion of the tank, and enough clearance should be provided to permit free movement of the outer cylinder.

4. Groove or channel in the tank discontinued at the rear end. The set

(*Turn to Page* 173)

TABLE 1

Comparative data on size, weight, and performance of various types of spray equipment.

Type of Equipment	*Dimensions*	*Gross Weight (Full)*	*Capacity*	*Concentration of Insecticide* DDT	Pyrethrins	*Dosage per 1,000 Cubic Feet*	*Area Treated.*
	Inches	*Grams*	*Milliliters*	*Per Cent*	*Per Cent*	*Milliliters*	*1,000 Cu. Ft.*
Atomizer:							
Pocket size	1 x 5½	158	50	20	2	0.5	100
Household size	1¼ x 8	465	125	20	2	.5	250
Aerosol, 1-pound bomb	3 x 5½	750	454 gm.	3	.4	3.0 gm.	150
Flit-gun:							
Conventional	3¾ x 4⅜ x 12	800	454	..	.1	10.0	45
Modified	3¾ x 4⅜ x 12	800	454	20	2	.5	908

Was
THERE
AN
INSECTICIDE
IN THE
HOUSE?
Yes. BUT YOU'D NEVER KNOW IT
HAD BEEN USED ONLY A SHORT TIME AGO—
IF OUR UNRIVALED PERFUME-
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PAINT AND VARNISH REMOVERS

By Milton A. Lesser

PAINTING is one of the most effective ways to protect a surface and restore its fresh appearance. It is poor economy, however, to apply a new coat of paint over a surface that is already cracked, chipped, blistered and peeling. Nor is it especially wise to put a light-colored paint over a darker one. Under these circumstances, the removal of old paint films not only yields better results, but in the long run is also much less costly.

When it is necessary to remove paint two methods are available—the blow torch and chemical removers. (1) Providing an efficient method of removing old paint, the blow torch presents hazards which prohibit its use in certain areas. Even in skilled hands, the torch is applicable only on flat surfaces and some scorching is unavoidable. (2) When used by inexperienced workers, the blow torch may raise the wood grain and tends to give an uneven charred surface that does not take paint well.

Chemical paint removers find very extensive use in modern renovating procedures. The formulation of chemical methods of removing paint has long engaged the attention of research men and paint technologists, with the result that many efficient products have been made available. In developing such compositions, these workers have taken into consideration the composition of old and new types of paints, varnishes and lacquers.

Paint consists essentially of a suspension of pigments in bonding, film-forming materials like drying oils, various types of natural and synthetic resins or cellulose derivatives. Therefore, the approach in formulating chemical removers aims at providing agents that will act on the bonding medium. By various mechanisms, the bonding agent is loosened sufficiently to permit easy removal of the paint film. A modern, scientifically formulated paint remover should have the ability to penetrate multiple paint coatings and to exert its lifting action at the interface which holds the film to the surface. Some products are intended for the removal of specific types of finishes, but as a rule the chemist's purpose is to provide compositions that will be effective against a variety of coating materials.

Provided as liquids or pastes, paint removers or strippers are usually applied with a brush, or in some cases, by spraying. Large flat brushes are preferred and heavy coats of the remover are flowed onto the surface to be stripped; the material being applied in one direction only. If application by spraying is indicated, a non-atomizing spray gun should be used, and the equipment adjusted to handle the material, which is usually of a fairly viscous nature.

The remover must be allowed to remain on the paint long enough to react with the film and loosen it. The time required will vary, of course, with the type of remover and the kind and thickness of the paint film. Blistering and wrinkling of the paint film after a period of exposure to the action of the remover are signs that the stripper is doing its work. After an appropriate interval or when a test scraping shows that the remover has penetrated to the original surface, the old, softened paint film may be removed with a scraper, wire brush, steel wool or cloth. Some experienced workers sprinkle sawdust or the like over the disintegrated paint film so as to facilitate removal by "rolling." For moldings, flutings or other carved surfaces, the softened paint is removed with steel wool or a wire brush. With some of the more modern types of removers, where a large area has been treated, it is sometimes possible to remove the loosened film by means of a stream of water from a hose.

Various alkalies and a number of organic solvents or mixtures of these types of materials form the bases of most paint removers. (3) On occasion, however, other types of chemicals are used to disintegrate the paint films.

Removers based on alkalies perform their function by penetrating the paint coat and saponifying the fatty acid constituents of the bonding medium, thereby loosening and facilitating the removal of the paint film. Alkali type removers are often used for floor work, such as removing varnish or shellac prior to refinishing. Such removers are also highly efficient in removing paint from steel, but most such materials have a tendency to corrode aluminum. In contrast to many solvent removers, alkaline preparations have the advantage of being non-flammable. This, however, is counter-balanced by the fact that such preparations are generally quite hard on the hands and tend to discolor and raise the grain of wood.

Perhaps the oldest type of alkali paint removers are those based upon caustic soda or concentratd lye solutions. Used in about 5 per cent concentration, with or without the addition of a small amount of unslaked lime, such solutions are quite efficient, when applied with a fiber (not bristle) brush until the paint softens. Unfortunately this type of remover will raise

the grain of wood, often discolor it and unless well washed out of the wood and allowed to dry thoroughly may injure new coats of either paint or varnish. (2,4)

Trisodium phosphate is another cheap and efficient alkali for removing paint, especially if the coating is not too old or thick. Used in the proportion of about one pound per gallon of hot or boiling water, the solution is mopped or brushed on the surface to be treated and allowed to react for about half an hour. After removal of the paint, the surface must be well rinsed with water. (5) It has been reported (6) that a 10 per cent solution of trisodium phosphate, when used at or near the boiling temperature, is a very cheap and effective agent for removing paint from metal surfaces prior to repainting.

Various silicate solutions are also effective paint removers. Sodium silicate solution or ordinary water glass is sometimes used for this purpose and works effectively in about ten minutes.

Sodium metasilicate is also used for this purpose; being employed in the proportion of about one pound per gallon of hot water.

Frequently, simple paint and lacquer removers are prepared by mixing dry powdered alkali with a filler or similar material. Prepared by simple mixing and packing into sealed containers, the dry powders are dissolved in water in suitable proportions prior to use. The following formula is quite typical of products of this general class: (5)

	Parts
Caustic soda, powdered	35.0
Whiting	65.0

A somewhat more elaborate mixture may be made along the following lines:

	Parts
Caustic soda, powdered	20.0
Caustic potash, powdered	15.0
Whiting	35.0
Pumice powder	30.0

Stripping compounds, designed for removing paint, lacquer or enamel from iron and steel are made along similar lines, as indicated in the following formula:

	Parts
Sodium carbonate	25.0
Caustic soda	67.0
Trisodium phosphate, monohydrate	5.0
Wetting agent	3.0

A compound of this sort is employed by making a hot, nearly boiling solution in a concentration of from 6 to 8 ounces per gallon of water. The object is dipped into the solution, or the solution is applied to the surface of the item being stripped.

For stripping paint from aluminum, a base preparation such as the following has been suggested: (5)

	Parts
Sodium metasilicate	47.5
Sodium silicate	47.5
Rosin	5.0

PAINT removers in paste form offer the advantage of better adhesion, more efficient stripping action, and easier removal. Made with a pasting agent like soap, which provides wetting and penetrating action of its own, a typical alkali-based product of this type can be made along the following lines:

	Parts
Soft soap	30.0
Caustic soda	10.0
Water	30.0
Whiting	20.0
Pumice powder	10.0

Other pasty paint removers have been described in the older patent literature. One such is given (7) as consisting of:

	Parts
Caustic soda	10.45
Sodium silicate solution	9.14
Water	69.55
Copperas	0.71
Flour	10.15

Paint removers based on solvents undoubtedly find greater use in modern practice, especially for small scale work. However, recent developments resulting from wartime requirements indicate that solvent-based strippers can be used efficiently and economically for larger surfaces. Materials of this sort operate through a direct solvent effect on the bonding medium.

Solvents like acetone or turpentine, used alone, make quite effective removers for certain types of paint films. More commonly, however, various solvents are used in combination to provide a more efficient action, as for example, on multiple coatings where different types of paint have been used. Mixing of solvents is also employed to reduce inflammability. Non-combustible chlorinated hydrocarbons are frequently incorporated in solvent type paint removers to reduce fire hazard. Although removers of this type may be considered noninflammable in their original concentration, discretion must be employed in their use because the noninflammable portion tends to evaporate faster than the flammable constituents. (8) Evaporation also brings up the factor of toxic vapors. Deaths have been attributed to the fumes from paint removers, (9) and the need for adequate ventilation must be stressed at all times.

The liquid type of solvent paint remover is intended principally for use on horizontal surfaces. Simple products of this type usually consist of mixtures of one or more miscible solvents. For example, an effective preparation for removing paint and varnish may be made by mixing equal parts of amyl acetate, acetone and benzol. A rather efficient product, described (5) as suitable for removing chlorinated rubber, oil, cellulose and "spirit" lacquer, and paints is prepared from:

	Parts
Acetone	30.0
Methylcyclohexanone	30.0
Alcohol	20.0
Tetralin	20.0

Where a non-inflammable paint and lacquer remover is desired, the following offers an illustrative formula:

	Parts
Carbon tetrachloride or trichlorethylene	70.0
Toluene	10.0
Xylol	10.0
Ethyl lactate	10.0

Indicative of the more specialized type of liquid preparations is the following combination said (10) to have been recommended by the British Air Ministry for removing nitrocellulose varnish:

	Parts
Amyl or butyl acetate	10.0
Alcohol	40.0
Benzene	40.0
Acetone	10.0

Quite a number of removers based on combinations of solvents, have also been described in various patents. (11,12,13)

It is very common practice to incorporate with the solvents some materials that will retard evaporation and so provide more effective action. Paraffin wax has long been used for this purpose and is now considered a quite standard component of both older and newer types of solvent paint removers.(2,14-18) When added in small amounts, the product remains liquid, but higher proportions result in more pasty materials. With such additions, however, it is necessary that all the wax be removed from the stripped surface before repainting is started. For this purpose it is generally recommended that the surface be washed with alcohol, benzene, turpentine or other wax solvent and allowed to dry.(4)

One very simple preparation employing paraffin wax as an evaporation retarder may be made from:(5)

	Parts
Paraffin wax	4.0
Benzol	8.0
Wood alcohol (methanol)	7.0

Another similar paint, varnish and lacquer remover, recommended in a bulletin of the North Dakota State Laboratories Department, (19) consists of:

Paraffin wax	1 lb.
Toluene or benzol	1 gal.
Acetone	½ gal.
Denatured alcohol or wood alcohol	½ gal.

The paraffin wax is melted and poured into the toluene or benzol. Mix the acetone and alcohol and add the paraffin solution, with constant stirring.

Slightly different is the following preparation which yields a low-priced but effective paint remover with a pleasant odor:

	Parts
Ethyl acetate	30.0
Benzol	40.0
Methanol	27.5
Paraffin wax	2.0
Methyl salicylate	0.5

Where a noninflammable paste type paint and lacquer remover is wanted, such a product can be made by using a larger proportion of wax and a high ratio of chlorinated hydrocarbons, as in the following formula from Bennett's reference text:

	Parts
Scale paraffin wax (40/42° C.)	20.0
Carbon tetrachloride or trichlorethylene	60.0
Hexaline	10.0

Of course many materials may be used in conjunction with paraffin wax or replace it entirely for the purpose of slowing evaporation of the active solvents, for imparting thickness or "body to the removers, or to serve both functions simultaneously. A check of patent literature shows that materials like rubber,(20,21) metallic soaps, (22) various alcoholates, (23) and other compounds have been recommended. Especially noteworthy is the emphasis, in both patent and technical sources, on the usefulness of cellulose derivatives, such as nitrocellulose, methyl cellulose, cellulose acetate or glycollate as thickeners and evaporation retarders for paint removers.(24)

Not an especially new idea,(25) one patent (26) granted over a decade ago described a paint, varnish and lacquer remover as consisting of nitrocellulose dissolved in acetone, plus alcohol, petroleum naphtha and an aqueous solution of calcium acetate. More recently, European workers(27, 28) have reported on the advantages of lacquer removers based on combinations of dichloromethane-paraffin-methyl cellulose mixtures.

Formulas illustrating the use of cellulose derivatives are available in other technical sources. Crowley,(29) for instance, lists the following paint remover:

Benzol	5 gal.
Ethyl acetate	3 gal.
Butyl acetate	2 gal.
Paraffin wax	3½ lb.
Nitrocellulose	½ oz.

Dissolve the nitrocellulose in the acetates. Separately dissolve the paraffin wax in the benzol and mix the two solutions.

Another cellulose derivative, cellulose acetate, is employed in the following rather versatile compound useful for removing chlorinated rubber, lacquers and paints:(5)

	Parts
Cellulose acetate	15.0
Acetone	35.0
Isopropyl alcohol	10.0
Tetralin	30.0
Methycyclohexanone	10.0

Various other materials may be incorporated advantageously into solvents to increase their general efficiency as paint removers. Filling agents are often used, not only to give body to the composition, but also to facilitate the removal of the solvent-disintegrated paint film. Fillers such as chalk or whiting, ground quartz or the like are suitable for such purposes.(30) An example of the use of whiting is given in the following paint and varnish remover:

	Parts
Whiting	21.00
Acetone	21.00
Denatured alcohol	21.00
Benzol	23.00
Paraffin wax	1.25

Rattonstone finds frequent use by painters and professional refinishers. An example of its use in a paint and varnish remover is given in the following quite simple combination:(29)

Denatured alcohol	2 qt.
Benzol	6 qt.
Rattonstone, powdered	2 oz.

A British patent (31) provides some rather interesting data with regard to the use of special fillers for paint removers. In addition to the solvent mixture and film-forming thickening agent, it is suggested that a filling agent in the form of leaves or scales be added to form a skin. The recommended materials include mica, talc, fish scales, bismuth oxychloride and graphite.

As already indicated, alkalies and solvents are sometimes combined in one preparation to provide a double attack on the paint film or, more properly, the bonding medium. The formulation of such products requires special consideration. One approach to the problem has been through the selection of active solvents capable of dissolving alkalies. As an example, there may be cited the following formula for a paint remover:(32)

Potassium hydroxide	165	Gm.
Denatured alcohol	165	cc.
Oil of turpentine	165	cc.
Gasoline	165	cc.
Castor oil	85	cc.
Acetone, to make	1,000	cc.

Dissolve the potassium hydroxide in 300 cc. of acetone, add the other liquids and then sufficient acetone to bring to volume. Mix by shaking.

Variations of this principle are given in several patents.(16) In one

(*Turn to Page* 159)

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AEROSOL TOXICITY

Effect of the nonvolatile content of a DDT aerosol on mortality of houseflies

By J. H. Fales, E. R. McGovran and L. D. Goodhue

Bureau of Entomology and Plant Quarantine, U. S. D. A.

THE use of large quantities of insecticidal aerosols has stimulated research to increase their killing power. In a previous paper[2] it was stated that one of the factors influencing the toxicity of an aerosol is the proportion of nonvolatile material present in the solution. The work reported showed that, although the settling rate of the aerosol containing the largest amount of nonvolatile material was most rapid, such an aerosol caused the greatest mortality of houseflies. The work reported herein is a continuation of that investigation in which aerosols containing DDT were used and the nonvolatile content ranged from 7.5 to 30 per cent. The particle-size distribution was determined on each solution and correlated with the toxicity.

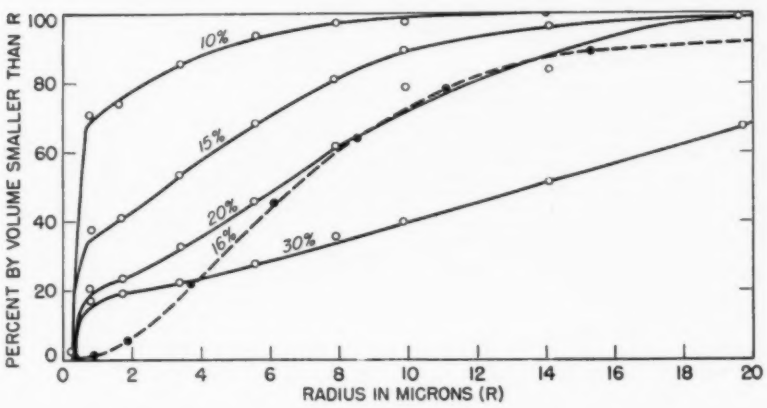

Figure 1.—Cumulative frequency curves showing the percentage by volume smaller than any radius of four Freon solutions containing varying amounts of dibutyl phthalate-DDT (14:1) and one solution (broken line) containing pyrethrum extract and sesame oil (1:1). The curves not reaching 100 per cent on this plot reach that point as follows: 15 per cent at 25.3 microns, 20 per cent at 36.6 microns, and 30 per cent at 42.2 microns. The dotted curve (16 per cent) reaches 100 per cent at 27.5 microns.

Particle-Size Distribution

Since dibutyl phthalate is nonvolatile and is a good solvent for DDT, this liquid was chosen as a cosolvent to keep the DDT dissolved in the Freon-12 (dichlorodifluoromethane) and as a nonvolatile material to control the particle size. A stock solution was made by dissolving 1 part of DDT (purified aerosol grade) in 14 parts of dibutyl phthalate by weight. Five solutions of this mixture, containing 7.5, 10, 15, 20, and 30 per cent by weight in Freon-12, were then prepared. The particle-size distribution in the aerosols produced by each solution was determined by a microprojection method (Goodhue and Riley[1]). A completely settled sample was collected on slides rendered oleophobic with mannitan monolaurate, and the particle size estimated by measuring the images projected on a calibrated screen. Curves were drawn from the average of two runs agreeing within 5 per cent in all ranges.

These cumulative frequency curves are shown in figure 1. Since there is very little difference between the results obtained with 7.5 and 10 per cent solutions, the curve for the 7.5 per cent solution is not shown. Curves in the upper left of the graph correspond to the finest and those in the lower right to the coarsest aerosols. The percentage above or below any size can be read directly from the curves.

The particle-size distribution of an aerosol produced from the solution containing 16 per cent of nonvolatile material—8 per cent of pyrethrum extract (pyrethrins 20 per cent) and 8 per cent of sesame oil—is shown by the broken line in figure 1. There is considerable difference between this distribution and the others. Dibutyl phthalate produces an enormous number of particles with radii less than 1 micron, whereas pyrethrum and sesame oil produce relatively few of such fine particles.

Toxicity Tests

The toxicity tests with the fine solutions were made against the housefly (*Musca domestica* L.) in a Peet-Grady chamber. The tests followed

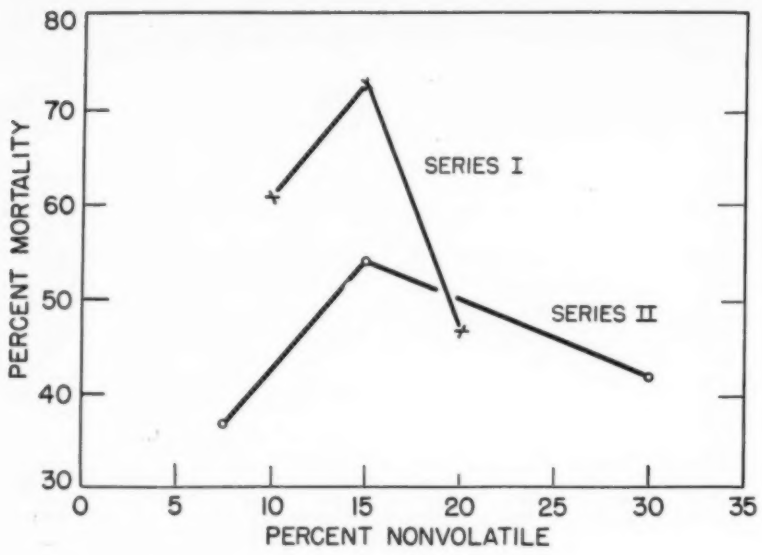

Figure 2.—Toxicity to houseflies of DDT-dibutyl phthalate-Freon aerosols of different nonvolatile content.

the procedure previously described (2). Since DDT gives little or no knock-down effect, the still active insects had to be captured by quickly placing a glass cylinder over them and transferring them to the recovery cage. The results of two series of 10 tests each are shown in figure 2. The flies in series I were much less resistant to these DDT aerosols than the flies in series II.

Discussion

The curves in figure 2 show that the aerosol solution containing 15 per cent of nonvolatile material produced the most toxic aerosol at both levels of resistance. The curves in figure 1 show that 50 per cent of the liquid volume of this aerosol was in drops less than 3 microns in radius and the remainder in drops with radii between 3 and 20 microns. The 10 per cent nonvolatile sample, which was less toxic, had only 16 per cent of its drops in the latter range, and the largest drops were only 14 microns in radius. The fact that approximately 84 per cent of the volume of the 7.5 and 10 per cent nonvolatile samples consisted of drops below 3 microns indicates that increasing the proportionate volume of material in drops of this size reduced the effectiveness against houseflies.

The 20 per cent nonvolatile sample had 30 per cent of the drops below 3 microns and approximately 69 per cent between 3 and 20 microns in radius. Only about 1 per cent was larger than 20 microns. The 30 per cent nonvolatile sample had 21 per cent of the drops below 3 microns and 71 per cent between 3 and 20 microns. Approximately 8 per cent of the drops were larger than 20 microns. These figures indicate that the 3 to 20 micron range is not by itself the most toxic, as both the 20 and 30 per cent nonvolatile content had more material in this range than those of 15 per cent nonvolatile content, which were the most toxic. With the aerosols tested it appears that drops below 3 microns are more effective than those above 20 microns, when both are combined with 50 per cent or more of the drops in the range from 3 to 20 microns.

The results of this investigation show no clear-cut relation between the particle size of an aerosol and its insecticidal efficiency. They do, however, confirm the previously reported tests in showing that about 15 per cent of nonvolatile material produces the best results, even though the particle-size distribution varies.

Summary

Tests in a Peet-Grady chamber showed that DDT-dibutyl phthalate (1:14)-Freon aerosol will give the greatest mortality of houseflies (*Musca domestica L.*) when the nonvolatile content is about 15 per cent. The particle-size distribution curves are presented for 10, 15, 20, and 30 per cent of nonvolatile material. The most toxic aerosol had 50 per cent of its volume in drops below 3 microns in radius and the remainder in drops from 3 to 20 microns. Aerosols that were finer and coarser than this were less toxic.

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DDT from Airplanes

Sprays containing 5 per cent of DDT applied by airplane at 2-3 quarts per acre reduced the population of adult mosquitoes (*Aedes taeniorhynchus*) as much as 99 per cent in some cases. Airplane applications of DDT dusts proved ineffective. A mixture of smoke and spray obtained by injecting a solution of 20 per cent DDT in cyclohexanone and motor oil into a specially constructed exhaust pipe gave excellent control. A solution containing 5 per cent of DDT in motor oil was ineffective. A. W. Lindquist, A. H. Madden, C. N. Husman, and B. V. Travis. *J. Econ. Entomol. 38*, 541-4.

Fungicides and Germicides

Floating soap collected from the black liquors from cellulose treatment is stirred slowly with a hot aqueous solution of a salt of a heavy metal. As the solution is added, a precipitate of the corresponding metallic oleoresinate forms and is separated. In the case of copper this is a dark green plastic mass. The final product is washed and dried. Salts of poisonous metals such as copper, mercury and silver, may be used in this way to give germicides and fungicides. P. Hodges, to Gulf States Paper Corp. U. S. Patent No. 2,381,822.

PAINT REMOVERS

(*From Page 155*)

case,(33) a paint and varnish remover consists of:

Water (hot)	3 qt.
Irish moss	1 lb.
Methyl (wood) alcohol	12 oz.
Fuller's earth	12 oz.
Sodium hydroxide	4 lb.
Potassium hydroxide	4 lb.

THE trend toward the use of emulsions, apparent in so many modern industries, is also noticeable in the formulation of paint removers. Offering the definite economies inherent in such products and affording such advantages as reduced fire hazard, a number of typical emulsion type paint removers have been described in the more recent technical literature. As an example, there may be given the following preparation, indicated (5) as being especially suitable for removing oil paints:

	Parts
Olec acid	4.0
Benzol	2.0
Carbon tetrachloride or trichlorethylene	20.0
Alcohol	20.0
Ammonia (0.910)	16.0
Water	20.0

As is so often the case in modern technological advances, newer types of emulsion products are often described in patents. A check of such sources shows that several variations have been developed. Some do not show a marked departure from the usual type of product, except that water has been included. This is evident in a German patent (34) granted a few years ago and describing non-inflammable products of a creamy consistency useful for removing paint and lacquer coatings. In this instance a solution of rubber and a waxy material in a chlorinated hydrocarbon is mixed with an aqueous solution of an inflammable solvent like acetone. The aqueous part contains an emulsifying agent, such as sulfonated oil, to assure proper mixing of the two phases.

Something of a departure in formulation is represented in two patents granted very recently to the same worker.(35) In the first of these a paint and varnish remover is given as comprising the reaction products of the following mixture:

	Parts
Nitropropane	15.0
Normal methyl-amyl ketone	15.0
Oleic acid	10.0
Triethanolamine	4.3
Pine oil	2.0
Water	30.0

The second patent describes a paste-like mixture for like uses:

	Per Cent
Water	12.0
Monoethanolamine	10.0
Kerosene	10.0
Monoethanolamine oleate	13.0
Nitropropane	36.0
Isopropyl alcohol	19.0

Of course, where, mutual miscibility exists, there is no need for an emulsifying agent to incorporate varying quantities of water into a formula. For example, the following mixture forms an extremely efficient remover of high grade alkyd resin enamels:(36)

	Parts
Ethylene dichloride	45.0
methyl cellulose, cellulose acetate or	
Methyl alcohol	50.0
Water	5.0

This obviously very specialized product recalls that with some of the newer, more durable and resistant finishes, different kinds of chemicals must be employed as stripping agents. Under such circumstances acids sometimes enter the compositions required to remove modern enamel coatings or the like. One older patented preparation (37) for removing enamel from automobiles, furniture or other surfaces incorporates nitric acid as in active constituent, as in the example below:

	Parts
Benzene	50.0
Alcohol	25.0
Acetone	10.0
Citric Acid	10.0
Sulfonated oil	5.0
Beeswax	1.0

Somewhat more recent is the recommendation (38) that alcoholic solutions of boric acid be combined with solvents like carbon tetrachloride plus benzine or benzene to remove lacquers or oils from various surfaces. Acids may also be incorporated into emulsions (39).

The specialties manufacturer, while taking cognizance of new developments, will find that the standard types of removers based on alkalies or, preferably, on solvents will meet most requirements of the purchasing public.

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The JOBBER...

An important, though much maligned, figure in the distribution picture on potash soaps

By Melvin Fuld*
Fuld Brothers

THERE are many soap makers who evidently believe that the jobber is an unnecessary middle man, and there are others who are equally confident that the jobber is a necessary factor in speeding up the distribution of goods. I am in the latter class. I see sound economic reasons for jobbers being in the potash soap distribution picture. I recognize equally that other soap makers have often failed to get desired distribution through jobbers. I do not believe such failure is necessarily due to the system itself, but like the failure of any business, probably is due to poor selection of the outlet.

What is a jobber? To my mind, a jobber represents an organization skilled in the sale of a classification of products to the ultimate consumer. He is able to purchase in quantity, to warehouse his merchandise, and to sell it in smaller lots to the ultimate consumer. He is able to perform a service that the independent manufacturer could not duplicate except at great cost; that is, the sale, the dissemination of sales information, and the extension of credit to thousands of small users of any given class of goods.

It is obvious to every man in business that to reach the small users of any commodity, the grass roots, so to speak, he must have a very large and well trained organization reaching into every corner of the country if he be a manufacturer with national distribution as a policy. Such a sales organization is an expensive one. Of course, there are manufacturers whose policy is national distribution and who sell to the ultimate consumer, but who restrict their sales to large consumers only. In my opinion, these people do a serviceable job in the distribution of merchandise. But, if merchandise is to be distributed entirely through these channels, who will sell the small user, the ultimate consumer who purchases in such small quantities that he is unable to attract the salesmen of organizations interested only in big orders? The jobber to my mind, is a very necessary vehicle in the general picture of distribution in the American scheme of things. He enables the manufacturer to get his product into the nooks and corners, the far away places, the out of reach customers. This represents a service which no other known method of distribution can develop as economically.

The jobber has been very definitely maligned in certain quarters. For the most part I believe this criticism is basically unfounded. True, considering jobbers as a class, there are those in this field who are not worthy of the designation, and who should not be in business. But, we can hardly examine the list of customers of any business without finding people in the same category. We need not then necessarily condemn all jobbers as a distributing vehicle simply because some members of the jobber group engage in practices that we as manufacturers, cannot possibly condone.

In the distribution of soap or any other product through jobbers, it is the manufacturer's responsibility, acting individually and on his own initiative, to see that offenders of rules of good business are eliminated from his books. Whether you sell jobbers or not, it is good policy not to place the products of a good manufacturing concern in the hands of unscrupulous outlets. I recognize the fact that there are some in the jobber set up and in other designations of distribution, who will purchase bulk quantitites of products from a manufacturer and adulterate or dilute them in various ways, taking the manufacturer's own description of the concentrated product for his description of the diluted one. This is grand larceny, of course, and cannot be condoned. It will destroy the distribution of goods. It is the type of practice which must be eliminated, whether you sell through jobbers or whether you do not. Such practices exist unfortunately in almost every business, regardless of its method of distribution, and it is incumbent upon the management of every business to watch its sales outlets carefully, in order to protect its merchandise and its reputation.

In the years we have been selling potash soaps and other sanitary chemicals to the jobbing trade, our firm has found it necessary from time to time to remove our merchandise from certain peoples' hands. We believe that any other manufacturer would have taken similar action, were he interested in the proper promotion of his goods through these channels, regardless of whether the individuals or institutions involved were jobbers or not. By the same token, we can point with considerable pride, to a much larger number of jobber outlets, who have been selling our products for many years, and

* Before Potash Soap Division, Association of American Soap & Glycerine Producers, Hotel Roosevelt, New York, Jan. 10, 1946.

The Men....

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Multicide Emulsion Spray Concentrate, 2.5 lbs. DDT per gal. (30%).
Multicide Commercial Growers' Spray Concentrate, 1.5 lbs. DDT per gal. (17%).
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IT IS of course necessary for any sales organization to contact its customers consistently; to see that its customers are constantly aware of the nature of the goods manufactured; to see that they receive the proper attention from salesmen in the field. It is the first duty of any manufacturer, regardless of whether he sells through jobbers, or direct, to see that the people into whose hands his goods come, are fully aware of what the goods will do, fully aware of the story of their performance, where they fit, and where they do not. It is at this particular point that most of those who have tried the jobber distribution method have fallen down. Placing merchandise in the hands of a jobber is not the end of a manufacturer's job. As far as sales are concerned, it is really only the beginning. I believe that it is the manufacturer's duty to see that the sales organization of any jobber is fairly schooled in all of the knowledge necessary for the proper sale of the merchandise supplied. It is necessary for the manufacturer to train jobber organizations on the selling points of his products; to train them on what those products will do in the field, and what they will not do; to advise them as to how this particular line of products meets those points of competition with which the jobber organization finds itself competing in the sale of the goods to the ultimate consumer.

It is also the manufacturer's duty, where his jobber repackages the product sold to him, to see that the repackaging is done in a way that parallels the manufacturer's own packaging and labelling policy. I do not believe that any manufacturer of potash or liquid soaps should permit a jobber to dilute soap to a lower concentration. There are, of course, exceptions to this rule, but in the main, they are exceptions. Basically, I believe that the product should be sold to the consumer as it is shipped by the manufacturer, and not reduced by the addition of adulterants of any kind to lower concentrations. This practice is often condoned, by the desire of the manufacturer and/or the jobber to reduce freight costs. In some cases it may be inspired by customers who, being penny wise and dollar foolish, insist that the jobber sell them a product at a price to meet competition regardless of quality. Obvioulsy, no jobber or manufacturer can sell a 20 per cent soap in competition with a 15 per cent soap. However, it is common knowledge that there are those customers, be they customers of jobbers or sellers, who demand such competition. There are also many buyers whose methods of testing liquid soaps are very crude. Of course, there are also some jobbers who will walk into the field and sell a 10 per cent soap for a factory application, where a much higher concentration is definitely indicated. Such a jobber is doing a bad job for himself, for his customer, and for his manufacturer. But, if the manufacturer has an adequate sales and field organization, these exceptions are soon brought to his attention, and correction can be made in the field.

Jobber distribution of potash soaps is a sound method, says Mr. Fuld, when properly handled... but the jobber must be controlled and educated

Properly handled, jobber distribution of potash soap products is a sound method of distribution. Improperly handled, it presents the same problems as improper distribution through other channels. Jobbers in themselves are not a liability. They become a liability only to the extent that the manufacturer fails to control and educate them. Any manufacturer of soap or any other product, who places his output in the hands of jobbers with the hope that they in themselves will sell it without further attention from the manufacturer or his sales organization, is somewhat childish in his appreciation of the basic principles of selling and of good business. I believe that those manufacturers who have had experience with jobber distribution methods, if they are honest with themselves in examining their past records, will find that their bad experience is due to their own lack of control, lack of education, and lack of direction of their jobbers' selling program. I do not believe that the use of the jobber as a means of distribution of potash soaps or any other merchandise, eliminates from the manufacturer's picture the necessity for proper education of his customer and the customer's salesmen.

And, by the same token, any manufacturer who feels that selling through jobbers and jobber's private label, gives him the privilege of producing goods of inferior quality, is equally as wrong. He will certainly find, that inferior quality in merchandise cannot be offset by any method of distribution. It takes a good product to build a good business, regardless of the method of distribution used.

Jobber distribution is not an easy way of avoiding responsibility for sales education and sales promotion. Jobber distribution is not a neat way of licking freight rates. Jobber distribution, properly used, is a sound American way of reaching the ultimate consumer, both large and small, and of achieving the economic distribution of goods, and the economic giving of credit. I believe in it, not as a panacea, not as an easy way to build up a volume, because it's a tough way, but as a sure way of getting product distribution when you pick the right jobbers, give them the right product, and see that they use the right selling and promotion methods.

———•———

Experiments to prove whether DDT is more stable as the technical grade than in pure form showed the reverse to be true. While it is probable that catalytic materials may exist in the technical grade, other impurities present inhibit their decomposing effect to some extent. When these inhibitors are removed without taking precautions against removal of catalytic substances, an apparent instability of DDT is produced. E. E. Flick and H. L. Haller. *J. Am. Chem. Soc. 68*, 142-3 (1946).

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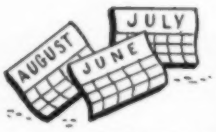

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The Determination of DDT

A Review of Analytical methods for the determination of DDT in the technical and pure compounds and in various insecticides, by total chlorine procedures

By C. G. Donovan
Insecticide Division
Production and Marketing Administration, U.S.D.A.

DUE to the great publicity given DDT, many insecticides containing it, both in dusts and in sprays, appeared on the market soon after its release for civilian use by the Government. Accurate methods for the quantitative determination of this material in different insecticidal mixtures became an immediate necessity.

The term "DDT" as used in this paper includes both the technical grade of 2,2-bis(parachlorophenyl)-1,1,1-trichloroethane, minimum setting point of 89°, and the purified grades. Pure DDT has a melting point of 108.5 to 109.0. The total organic chlorine content of technical DDT as given in the Joint Army-Navy Specifications (Jan-D-56A, March 16, 1945) ranges from 49.5 to 50.5 per cent. The technical grade of DDT which is the form used in most commercial insecticides contains from 70 to 80 per cent of 2,2-bis (parachlorophenyl) 1,1,1-trichloroethane, commonly designated DDT, considerable quantities of other isomers chiefly o,p' dichloro diphenyl trichloroethane and a small quantity of other by-products of its manufacture. Aerosol DDT, which has a melting point of not less than 103°, contains a greater quantity of pp' compound than the technical grade and less of the other by-products.

Colorimetric procedures for the determination of DDT are not practical in the presence of certain solvents or some other insecticidal ingredients. Other methods for the determination include that of Gunther[1], based upon the liberation of one chlorine ions from each molecule of DDT by dehydrohalogenating it with 1 N alcoholic potassium hydroxide; and several total chlorine procedures based on either combustion, or reduction with metallic sodium.

The methods here described are based on various modifications of the Umhoefer[2] method involving the determination of total organic chlorine. They are applicable for the determination of DDT in the commercial product, or mixtures of it in various dusts or powders that contain no benzene-soluble chlorine compounds other than DDT. The calculation of the per cent DDT obtained with the use of these methods is based on the theoretical percentage of total chlorine in dichlorodiphenyl-trichloroethane.

1—Method for the Determination of Total Chlorine in DDT

Weigh a quantity of sample containing about 0.75 gram of DDT, transfer to a 100 milliliter volumetric flask and make to volume with chlorine-free benzene. Shake until the DDT is dissolved and the solution well mixed. Transfer a 10 ml. aliquot to an Erlenmeyer flask (preferably a 300 ml flask with standard tapered neck). Evaporate on steam bath until most of the benzene is off. (It is not necessary or desirable to evaporate to dryness.) Add 25 ml isopropyl alcohol, 2.5 grams metallic sodium cut in small pieces, and shake the flask in order to mix the sample with the alcohol. Connect to a reflux condenser and boil gently for two to two and one-half hours, shaking occasionally. Decompose excess sodium by cautiously adding water, dropwise through the condenser. Then add 60 ml of water, cool the flask, and transfer contents to a 250 ml beaker. Add 2 or 3 drops of phenolphthalein solution, neutralize by adding HNO_3 (1-1) and then add 10 ml in excess. Add a slight excess of 0.1 N $AgNO_3$, coagulate the precipitated silver chloride by heating on steam bath one-half hour, stirring frequently. Cool, filter through a fast qualitative paper, and wash thoroughly with distilled water. Add 5 ml saturated ferric alum solution, and determine the excess $AgNO_3$ in the filtrate by titration with 0.1 N KCNS. Subtract the quantity of $AgNO_3$ found in the filtrate from that originally added. The difference will be that required to combine with the chlorine in the DDT. One ml 0.1 N $AgNO_3$ is equivalent to 0.003546 g of chlorine. To obtain percentage of DDT, multiply the chlorine value by 2.

METHODS FOR THE DETERMINATION OF DDT IN VARIOUS INSECTICIDAL MIXTURES BY TOTAL CHLORINE PROCEDURES.

2—Method for Determination of Total Chlorine in Dusting Mixtures Containing DDT in Absence of Organic Matter

Weigh a quantity of sample containing about 0.75 g of DDT, transfer to a 100 ml volumetric flask and add exactly 100 ml chlorine-free benzene. However, it is not advisable to use a quantity greater than 10 grams. In cases where 10 grams will not give 0.75 gram of DDT, a larger aliquot may be used. (Some dusts occupy considerable space in the flask, for this reason the benzene should be measured instead of making to volume.) Shake well until the DDT is in solution and the contents of the flask well mixed.

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Allow to settle, from this point proceed as directed in DDT method 1 beginning "Transfer a 10 ml aliquot."

3—Method for the Determination of Total Chlorine in Dusting Mixtures Containing DDT in Presence of Organic Matter Such as Coloring Matter, Plant Resins, Etc.

Weigh a quantity of sample containing about 0.75 g of DDT and transfer to a 100 ml volumetric flask, add a small amount of chlorine-free decolorizing carbon (0.5-1.0 g) and exactly 100 ml chlorine-free benzene. Shake until the DDT is dissolved and the solution well mixed. Filter into a narrow-necked flask through a fast qualitative paper without suction, keeping funnel covered with watch glass to avoid loss from evaporation. From this point proceed as directed in DDT method 1 beginning with "Transfer a 10 ml aliquot" through "Add 2 or 3 drops of phenolphthalein solution, neutralize by adding HNO_3 (1-1) and then add 10 ml in excess." Cool if necessary to room temperature, transfer contents of flask and washings to a small separatory funnel, and shake with 15 ml of a mixture of equal parts of iso-amyl alcohol and ethyl ether. Draw off aqueous layer into a second separatory funnel, and extract again with 15 ml of the iso-amyl alcohol-ethyl ether mixture. Draw off the aqueous layer into a 250 ml beaker. Wash the two extracts successively with 10 ml of water, and repeat with a successive washing with another 10 ml of water. Combine the aqueous wash solutions with the aqueous solution in the beaker. From this point proceed as directed in method 1 beginning "Add a slight excess of 0.1 N $AgNO_3$."

4—Method for the Determination of Total Chlorine in Mineral Oil Sprays Containing at Least 2% of DDT and in the Absence of Other Organic Matter (Plant Extractive Material, Organic Thiocyanates)

Transfer a quantity of sample containing from 0.065 to 0.075g of DDT to an Erlenmeyer flask (preferably a 300 ml flask with standard tapered neck). From this point proceed as directed in method 1 beginning "Add 25 ml isopropyl alcohol, 2.5 grams metallic sodium cut in small pieces."

NOTE: The small amount of mineral oil present in the quantity of sample recommended does not interfere with the coagulation of the AgCl. However, when it is necessary to take a larger amount of sample, method 5 should be used.

5—Method for the Determination of Total Chlorine in Mineral Oil Sprays Containing Less Than 2% DDT, or in Sprays Containing DDT and Other Organic Matter Such as Plant Extractive Material from Pyrethrum or Derris and/or Cube

Transfer a quantity of sample containing from 0.065 to 0.075 g of DDT to an Erlenmeyer flask (preferably a 300 ml flask with standard tapered neck). Proceed as directed in method 1 beginning "Add 25 ml isopropyl alcohol, 2.5 grams metallic sodium cut in small pieces," through "Decompose excess sodium by cautiously adding water, dropwise through the condenser." Then add 60 ml of water and cool the flask to room temperature. Add 2 or 3 drops of phenolphthalein solution, neutralize by adding HNO_3 (1-1) and then add 10 ml in excess. Transfer contents of flask and washings to a small separatory funnel, cool if necessary to room temperature, and shake with 15 ml of a mixture of equal parts of iso-amyl alcohol and ethyl ether. From this point proceed as directed in method 3 beginning "Draw off aqueous layer into a second separatory funnel."

6—Method for the Determination of Chlorine in Mineral Oil Sprays Containing DDT in the Presence of Organic Thiocyanates with or without Plant Extractive Material

Proceed as in method 5 through "Then add 60 ml of water." Add 5 ml of 30 per cent hydrogen peroxide, a few drops at a time through the top of the condenser. Heat the mixture in the flask to boiling and boil for 15 minutes. Add 5 ml more of 30 per cent hydrogen peroxide and boil again for 15 minutes. Cool to room temperature. From this point proceed as di-

(*Turn to Page* 201)

TABLE ILLUSTRATING RECOVERY OF DDT FROM PREPARED INSECTICIDES

Composition	*Method*	*Grams sample used*	*Percent DDT obtained*	*Average percent recovery*
10% DDT			9.95	
90% Silicious diluent	2	7.5	9.90	99.3
10% DDT				
20% Pyrethrum Powder	3	7.5	9.87	98.7
70% Silicious diluent			9.87	
10% DDT				
20% Cube Powder	3	7.5	9.87	98.4
70% Silicious diluent			9.81	
5% DDT		1.5685	4.98	100.4
95% Kerosene	4	1.4562	5.06	
2% DDT				
18% Methyl Naphthalenes	4	3.6836 2.7357	2.00 2.01	100.3
80% Kerosene				
5% DDT				
10% Pyrethrum (20-1 Concentrate)	5	1.6155 1.5007	5.01 5.02	100.3
85% Kerosene				
2% DDT				
6% Organic thiocyanate*	6	3.2586	2.03	101.5
92% Kerosene				
2% DDT				
6% Organic thiocyanate†	6	3.3237 3.1717	2.09 2.01	102.5
92% Kerosene				

* Concentrate consisting of not less than 12½% by volume of B-thiocyano B'-butoxy-diethyl ether plus 37½% by volume of B-thiocyano ethyl esters of aliphatic fatty acids whose carbon content is from 10 to 18.

† Isobornyl thiocyano acetate.

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TECHNICAL Briefs

From Current Literature in the Sanitary Products Field

Aqueous Metal Polish

An aqueous polishing product especially suitable for polishing metal and metallic objects, can be prepared by adding zinc oxide to a saturated solution of lime water, preferably in the proportion of 60 ounces by volume of saturated lime water and 16 ounces by weight of commercial zinc oxide. B. C. Van Valkenburgh. U. S. Patent No. 2,393,844.

Mothproofing Agents

Nuclear-chlorinated benzyl phenyl ethers such as trichlorobenzyl phenyl ether, with molecular weight below 360, are toxic to moth larvae. These compounds are soluble in dry-cleaning solvents, lack color and odor, are stable to air, light, and moderate heat, and do not affect the color or feel of the treated fabric. Highly chlorinated and probably the 2- or 6- position are preferred. Preparation of the ethers which have not been known before is given. A. H. Goddin and N. E. Searle, to E. I. du Pont. U. S. Patent No. 2,392,733.

Thiourea Rodenticides

Substituted thioureas are effective as rodenticides, such as *N*(1-naphthyl) thiourea, designated Antu, and other chemically related compounds. The thioureas can be mixed in a variety of baits containing cereal products and meat, or formed into pellets containing 90 per cent graham flour, 9 per cent molasses, and 1 per cent Antu. Fine suspensions can be made in water to poison rats in dry areas. Mice are also susceptible to Antu. C. P. Richter, to U. S. of America as represented by the Secretary of War. U. S. Patent No. 2,390,848.

Sabadilla Insecticide

A half pound of comminuted sabadilla seed is heated to 150°C. in 1 gallon of kerosene for an hour. The extract is an effective insecticide against houseflies. For dry insecticidal dusts, the powdered seed is heated in a suitable chamber and cooled before use. T. C. Allen and H. H. Harris. U. S. Patent No. 2,390,911.

Cricket Baits

Sodium fluoride or sodium acid arsenate mixed with bran and molasses, can be used as baits for control of crickets. DDT and 666 also are effective. F. Burke. *Food* 15, 37 (1946).

Synthetic Insecticides

Dihalogenated 3.4-dinitrocarbazoles, as pure compounds, as crude mixtures of isomers, or their salts, are useful as insecticides. They may be applied with wetting agents and fillers as spray suspensions, mixed with fillers for application as dusts, and incorporated in bran and molasses for use as poisoned baits. H. Schotte and R. Ebert. U. S. Patent No. 2,392,067.

Spreading Power of Oils

Oils for killing mosquito larvae on stagnant water should spread a film over the whole surface. Most oils except highly refined petroleum oils will spread over clean water. Stagnant waters have surfaces so contaminated by visible or invisible films that their surface tension is much lower than that of clean water; such waters hinder or prevent the spreading of oils. Esters of phthalic and salicylic acids have constant spreading power. By dissolving a spreading compound in a highly refined petroleum oil, the spreading power can be adjusted to any desired value. A simple method is given for determination of spreading power. N. D. Adam. *Bull. Entomol. Research* 36, 269-72.

Determination of *p,p'*-DDT

A colorimetric procedure for the determination of *para,para'*-DDT is based on the color produced when this compound is heated in a mixture of glacial acetic and concentrated sulfuric acids. The method is applicable to the estimation of *p,p'*-DDT in mixtures with the *o,p'*-isomer and in technical DDT when a small empirical correction is made. S. W. Chaikin. *Ind. Eng. Chem., Anal. Ed.* 18, 272-3 (1946).

Phenol Coefficients

Organisms presumably killed by phenol have been proved to be still capable of activity. *Staphylococcus aureus* or *Eberthella typhosa* after treatment with dilutions of phenol that have been considered lethal can be revived by adding 0.03 per cent of ferric chloride to the culture medium, or 0.1 per cent of activated charcoal. This is very important, and heretofore unrecognized, in determining the phenol coefficients of antiseptics and disinfectants. L. H. Flett, R. C. Haring, A. F. Guiteras, and R. J. Shapiro, *J. Bact.* 50, 591-5.

British Louse Powder

Naphthalene was found to be an effective insecticide for killing body lice quickly, but it fails to give any protection against reinfestation. Derris and pyrethrum, alone or in combination, were toxic for *Pediculus humanis corporis*, but inferior to other combinations of insecticides. The combination of high-boiling tar acids and derris was more toxic to lice than either alone. Such activated derris was the best preparation to prevent reinfestation. The British preparation referred to as A. L. 63 was outstand-

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ing as the best material to control lice for human use. The formula is: high-boiling tar acids 2 per cent, derris root 14.3 per cent giving 1 per cent of rotenone, naphthalene 50 per cent, and china clay 33.7 per cent. H. J. Craufurd-Benson and J. Macleod. *J. Hyg.* 44, 294-306 (1946); through *Chem. Abs.*

DDT on Still Waters

Crude 73 per cent DDT dissolved in waste engine oil or kerosene to give a 5 per cent solution, and applied as 1 ounce of DDT per acre, was lethal to anopheline and culicine larvae in 24 hours under optimum conditions. A concentration of 0.2 ounce gave 75 per cent mortality in 1 day and 100 per cent in 3 days. Waste engine oil alone at 2 gallons per acre did not reduce large anophelines in 1 day but completely eliminated them in 5 days. Applied at 8 gallons per acre, waste engine oil prevented development of anopheline larvae for 28 days. This effect was emphasized when 5 per cent DDT was added to the oil. Vegetation interferes with the spreading of DDT-oil solutions. Methods of applying the solutions to water surfaces are discussed. C. R. Ribbands. *Bull. Entomol. Research* 36, 315-30.

Toxicity of DDT

DDT was found to be highly irritating to the gastrointestinal tract of experimental animals, producing severe hemorrhagic lesions. It is readily absorbed through the alimentary tract and produces cumulative poisoning. The "lethal dose 50" for dogs is approximately 0.75 grams per kilogram. C. Chou, D. R. Kwang, and D. H. U. Chu. *Proc. Chinese Physiol Soc., Chengtu Branch* 2, 164-71 (1945).

Hypochlorite Solutions

Calcium hypochlorite is added to a hot aqueous solution containing excess alkali carbonate over that required to convert all the calcium to calcium carbonate. The latter is separated from the dissolved alkali hypochlorite. Stable solutions are obtained by this method. W. R. Bruce. British Patent No. 563,136.

Insect Repellent

Isopropyl cinnamate has excellent repelling properties for mosquitoes, flies, and other biting and annoying insects. It is nontoxic on the skin and a poor solvent for plastic materials. It may be applied to the body or clothing undiluted or incorporated in a solvent, or in an inert powder as in a paste or cream. It may be mixed with known insect repellents such as dimethyl phthalate. S. A. Hall, B. V. Travis and H. A. Jones, to free use of the people of the U. S. U. S. Patent No. 2,390,249.

DDT in Fly Control

Light surface sprays containing technical DDT or a dark brown sirupy liquid by-product from DDT manufacture killed adult stableflies (*Stomoxyx calcitrans*) emerging from deposits of marine grass. Stock solutions of the materials in commercial xylene were emulsified in bay water with Triton X-100. Emulsions containing 0.5 pr cent of DDT or 2.5 per cent of the by-product mentioned, applied at 2 gallons per 100 square feet, gave 90-95 per cent kills. These concentrations and rates of application protected uninfested grass not subjected to tidal washing from critical breeding, and killed 84-90 per cent of the flies in infested grass subjected to heavy tidal washing. The maximum amount of dilute spray applied per mile of shore line was 600 gallons, and the minimum 100 gallons. E. B. Blakeslee. *J. Econ. Entomol. 38,* 548-52.

DDT in Mosquito Control

Results of tests in cages and in a jungle hospital tent in Panama showed that screen wire and tent wall surfaces sprayed with DDT will knock down adult *Anopheles Albimanus* and *A. quadrimaculatus* in 47 minutes or less, and that treated tent walls may remain active for 32 days. The cages were treated with 200 milligrams of DDT per square foot, the tent walls with 1 quart of 5 per cent DDT in kerosene for an 8 x 8 x 8 foot tent. *A. albimanus* was more resistant to DDT than *A. quadrimaculatus.* DDT may be valuable for reducing malaria rates in areas where the vectors may be nondomestic or sylvan in habit. A. W. Lindquist and W. C. McDuffie. *J. Econ. Entomol. 38,* 608.

Rotproofing of Canvas

Species in 7 genera of fungi were isolated from rotted canvas obtained in the Pacific War Zone and New Zealand, of which only *Stachybotrys atra* and *Memnoniella echinata* rotted the fabric appreciably. Preliminary tests showed that cotton duck sprayed with a suspension of *S. atra,* and held at 27°C. in an atmosphere saturated with water, did not absorb sufficient moisture to support vigorous fungus growth.

Pieces of duck dipped in solutions of fungicide, dried, and sprayed twice with *S. atra* suspension, were fastened to porous earthenware pipe, and held in jars containing water at 27°C. for 4 weeks. The results, expressed as the mean tensile breaking load in pounds of fabric, show that sodium pentachlorophenate was effective at 0.05-2.0 per cent concentrations, pentachlorophenol and sodium salicyl-anilide at 0.5 per cent, copper and zinc phenates at 0.05 per cent of metal and higher. Copper oleate protected the fabric at 0.5 per cent and higher, but sparce fungus growth and severe bacterial staining without loss of tensile strength occurred at 1-2 per cent. Samples treated with 2 per cent of copper or zinc compounds revealed tensile strengths greater than the controls. R. M. Brien and J. M. Dingley. *New Zealand J. Sci. Tech.* 27B, 133-8; through *Chem. Abs.*

Disinfectant

A new class of disinfectants consists of alkylene biscarboxamidine derivatives, as exemplified by *N,N'*-hexamethylene bislauramidine-di-HCl, which is highly insecticidal, bactericidal, and fungicidal. The compounds of this type are white hygroscopic solids and are prepared by causing 1 equivalent of a diamine to react with 2 equivalents of an imide ester salt. M. Hunt, J. E. Kirby and J. F. Lontz, to E. I. duPont. U. S. Patent No. 2,364,075.

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INSECTICIDE SPRAYERS

(*From Page* 151)

screw in the compression cylinder rides in this channel.

5. Neck of filler opening of tank soldered to end plate of tank and fitted with threads on outside.

6. Filler cap.

7. Oil-resistant gasket.

8. Leather compression cup fitted around neck of filler opening and held in place by filler cap.

9. Face plate of sprayer with turned edge and soldered into front end of sprayer case. Face plate has recess to accommodate about three-fourths of valve packing nut.

10. Valve, ¼-inch or smaller L-shaped gasoline cut-off valve. (A smaller needle valve would be more suitable.)

11. Liquid line of copper or brass tubing, of 0.064 inch inside diameter.

12. Liquid line from vale to nozzle makes a 90° angle after emerging from the face plate. Exposed portion should be about ⅜ inch long.

13. Capillary tube, of 0.024 inch inside diameter (73 wire gage), preferably of stainless steel. The capillary tube should be about ⅜ inch long and should be inserted for at least half its length into the liquid line.

14. Air line of brass or copper, with an inside diameter of at least 1/16 inch. It runs through the length of the tank and is soldered to, but passes through, the rear of the end plate slightly beyond the leather compression cup, so that the cup cannot rotate and obstruct free flow of air through the tube. The front end of the air line is soldered to the surface of the face plate, at a point where a hole drilled through the plate at the center point of the air line will lie directly under the end of the capillary tube. Final adjustment can be made by sliding the capillary tube to its proper position before fastening the tube with solder.

15. Air vent 0.032 inch in diameter.

Literature Cited

Goodhue, L. D. 1942. Insecticidal aerosol production. Indus. and Engin. Chem. 34: 1456-1459.

Knipe, F. W., and N. R. Sitapathy. 1942. Notes on improvements made to equipment for spray killing of adult mosquitoes. Amer. Jour. Trop. Med. 22: 429-446.

Lindquist, A. W., H. O. Schroeder, and F. F. Knipling. 1945. Concentrated insecticides—preliminary studies of the use of concentrated sprays against houseflies and mosquitoes. Soap and Sanit. Chem. 21(7): 109, 111, 113, 119.

TGA MEETING REPORT

(*From Page* 49)

troduction of the Reece Bill, which if passed would result in a redefinition of the authority and scope of the Federal Trade Commission Act. Referring to the recent preoccupation of the FTC with the precise definition of the word "free" in connection with "free deals," Mr. Mock indicated that in his opinion the Federal Trade Commission is wasting its time in such legal hairsplitting. Said Mr. Mock, "It does not take a corps of experts to know that ordinarily the word 'free' as used in advertising means that a premium is given with a certain article and does not mean that any concern is in the habit of distributing its merchandise free of charge."

Referring to the current confused situation on the registration of trade marks, and specifically to the pending Lanham Bill awaiting action in Congress, Mr. Mock observed that there is no method at the present time, by which the prospective registrant of a trade mark can be instructed as to whether or not his proposed trade mark is really new. Passage of the Lanham Bill would correct this situation.

Turning to the preoccupation of the various government agencies with the encouragement of small business and the small business man, he indicated that while in theory the government favors the small business man, in actual practice the cards are largely stacked against him. The only way he can escape the tribulations of small business, is to become a big business man. In the toilet preparations field, at least, said Mr. Mock, small business, "cannot advertise nationally, cannot buy economically and is not organized to sell nationally. What we are therefore likely to see in increasing numbers is the phenomenon of the small toilet goods business either growing large or disappearing. . . . If the small manufacturer is to succeed, he must bring new products, new packages, new designs and some positive contribution to a highly competitive industry."

Merchandising Symposium

THE morning session on May 16th was given over to a symposium on merchandising. The first speaker, Martin Ullman, nationally known package designer, cautioned packagers of cosmetics and toiletries that their preference for the bizarre and exotic has gone too far. He commented that the average cosmetic package is overdressed, and that too much emphasis has been placed on packaging materials at the expense of the product itself. He observed that through the current period of shortage of packaging materials, and perhaps for some time to come, cosmetic manufacturers will have to learn how to use some of the older and perhaps less dramatic packaging materials.

The subject of advertising in general, and cosmetic advertising in particular, was covered by Charles R. Hogen and Mrs. Elizabeth Kidd of N. W. Ayer & Son, Inc. Mr. Hogen pointed out that contrary to the popular misconception, it is not the function of advertising to sell, but rather to inform and perhaps to persuade. Advertising he said, is not selling, but rather a specialized technique of mass communication, whose chief advantage is that, when properly prepared and directed, it can speedily and inexpensively make a good product well known to its logical sales audience.

Mrs. Kidd, in a humorous vein reviewed some of the mistakes made in poorly planned advertising campaigns. She emphasized that too much advertising which is supposedly planned to appeal to women is written without a sufficient knowledge of feminine psychology. Thus much soap advertising, she commented, pictures the housewife as a frowzily dressed woman, bending perpetually over a wash tub or a dish pan. She observed that women quite logically resent this unfair picturization of themselves.

The balance of the program featured talks by four speakers, representing the drug wholesaler, the retail druggist, the chain drug house and the department store, each telling something about the importance of his group in the distribution of toiletries and cosmetics, and suggesting to the manufacturers of these products how more advantage might be taken of each particular segment of the distributional chain to boost sales and improve service. Harold Altshul of Ketchum & Co., New York, spoke for the wholesale druggists, Edgar S. Bellis of Bronxville, N. Y., represented retail druggists, Frank Hale of Cunningham Drug Stores, Inc., Detroit, spoke for the drug chains, and William Murtha, mer-

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chandise manager for Bloomingdale's, New York, presented the point of view of the department store management.

Scientific Section Program

THE Scientific Section of the Association took over the entire program on May 17, with both morning and afternoon sessions being devoted to a series of ten papers which will later be published in full by the association. Pending publication of the full text, abstracts have been released. The following are abstracts of the papers which had most particular interest to the soap maker.

"A NEW METHOD OF ANALYSIS OF GLYCERINE AND GLYCOL FATTY ESTERS"

A. Troy and A. C. Bell
Research and Development Department
Colgate-Palmolive-Peet Co.

The paper describes a method of estimating mono-, di-, and tri-glycerides in a mixture of all three. It consists of splitting the esters with alkali and determining the glycerine so formed by means of oxidation with periodic acid. This figure, together with an estimation of the monoglyceride content, makes it possible to calculate the percentage of all three. Arithmetical and graphical methods of calculation are described. In the case of glycol esters, the mixture may be determined with a single analysis. Tables of test analyses of some pure compounds are given, together with the analyses of some common commercial products.

"THE SCIENTIFIC ASPECTS OF SKIN CLEANSING"

B. Thurber Guild, M. D.
Winthrop Chemical Company, Inc.

Conveniences and niceties of living are accepted as a development of modern time but soap, the symbol of cleanliness, is mentioned in the Old Testament. As soap was used by more people for more purposes, scientific interest was aroused to determine how soap cleansed. Following these studies better detergents were made.

About this time investigators began to report that fatty acids and alkalis were not well tolerated by a certain group of people and medical science turned to the consideration of the newly developed synthetic detergents which were giving such satisfactory results in industrial fields. Specialists in dermatology studied the applicability of these powerful detergents to the special needs of surgeons and those persons who had difficulty with soap.

Soap cleanses only when it is worked with water. It lowers surface tension, emulsifies oil, peptizes soil and deflocculates the undesirable mixture through the suds and rinse water. All true soaps hydrolize to form alkaline suds. Normally the skin surface is slightly acid. All soaps have a slight, to marked, keratolytic action and all soaps leave a residue of insoluble soap that resists rinsing. This residual film is heavier when worked with hard water. Some soaps contain allergenic perfumes and coloring matter.

The skin excretes waste and secretes protective fats. This mixture absorbs soil and because it may become unhygienic or esthetically objectionable, it is desirable that it be removed. The removal of contaminated natural fat is necessary for thorough cleansing but too frequent or prolonged washing may cause dryness or more severe irritation. Cleasing creams are not satisfactory detergents and special-purpose soaps are open to the same criticism as are ordinary soaps. Specifications are listed of what the author considers should be the properties, actions and reactions of a superior skin detergent.

Some of the more widely used classes of synthetic cleansing agents are mentioned and their properties and general characteristics are given, especially those offered to the public by the cosmetic and pharmaceutical industries. In general these "synthetic detergents" or "wetting agents" lower surface tension more markedly than does soap. They are better emulsifiers and are active in hard water. Some can be adjusted to a pH value corresponding to normal skin surfaces but do not hydrolize to form sulfuric acid. All are apt to be drying unless modified by incorporating suitable emollients. The reasons are given for preferring certain types of these compounds.

A reference bibliography is appended.

"THE INFLUENCE OF APPLICATIONS OF SOAPS AND SKIN CREAMS UPON THE RESPIRATORY METABOLISM OF RATS' SKINS"

by: John A. Killian, Ph.D., and M. Elizabeth Marsh, Ph.D.
Killian Research Laboratories, Inc.

Rates of respiratory metabolism of sections dissected from abdominal areas of skin and from areas of skin of the backs of rats have been determined by means of the Warburg micro-respirometer. Declines in rates of respiratory metabolism of skin have been found to be coincident with increasing ages of rats.

Applications of solutions of toilet soaps and skin creams have been made to areas of skin for varying periods of time. At the end of the periods of applications, the capacities of these treated areas of skin to absorb oxygen have been compared with those of anatomically similar areas of skin which either have not been treated or have received applications of water. The several series of experiments which will be reported do not reveal any evidence of a depressent effect upon the respiratory metabolism of skin resulting from single or repeated applications of soap solutions or from single applications of skin creams. However, some salts of fatty acids do produce transient decreases in rates of oxygen absorption by skin.

This presentation includes a discussion of the report of Amersbach, Nutini and Cook which was published in the *Archives of Dermatology and Syphilology*, 43:949 (1941).

AROMATIC CHEMICALS

(*From Page 51*)

chemicals from those essential oils, and we call them isolates, they are chemical bodies just as much when isolated from the natural product as if they were created by synthesis. Benzaldehyde which has been produced for many years by synthesis can very easily be obtained from bitter almond oil. As a matter of fact, bitter almond oil contains over 98 per cent benzaldehyde created by nature. The only reason that we do not isolate benzaldehyde from bitter almond is on account of the fact that with bitter almond oil even at a prewar price of $2.25 a lb. it is far too expensive a source, and synthesis will produce the identical product much cheaper.

"We know that benzyl acetate is one of the natural constituents in jasmin oil. To isolate benzyl acetate from jasmin oil would make the cost run into astronomical figures. Phenyl ethyl alcohol could be isolated from rose oil, but again at ridiculous, high costs. Vanillin could be isolated from vanilla beans; coumarin from tonka beans, but no one would think of doing it on account of the cost. Nevertheless, the product isolated at such high costs from natural sources would be identical with the synthesized product made at a fraction of the cost of the isolated one. New developments in chemistry aid continuously in the cheaper production of aromatic chemicals.

"About fifteen years ago several new processes for the production of phenyl ethyl alcohol were put in commercial use, resulting in a price reduction of 50 per cent. These new processes were due to the fact that certain chemical intermediates had become available at prices which made new processes using these intermediates commercially attractive. The phenyl ethyl alcohol produced by the new processes is identical with the phenyl ethyl alcohol produced by the old metallic sodium process, although the raw materials used are entirely different.

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could never have developed to its present point without the heavy chemical and intermediate chemical industry which has been built up in this country. We, like the manufacturers of pharmaceuticals, produce end products and depend largely on the progress made by the intermediate industry for the progress we can make. Without the close cooperation between the different branches of the chemical industry; progress would be slowed down considerably.

"What does all the above have to do with the condition of prices of essential oils? Linalool as well as geraniol has been produced by synthesis. However, the cost was so high that commercial exploitation of the processes was impossible.

"Due to prewar prices of the different essential oils used in our industry, research for the purpose of developing other means of producing the isolates was uninteresting from a financial standpoint. The present high prices of those essential oils has changed this situation entirely, and I am sure that many research laboratories are working on new processes to make those isolates. Sooner or later with the production of new intermediates or the reduction in prices of old intermediates, we will succeed in making those isolates commercially. Once this is done, it is a question whether the producers of essential oils used by us will not have lost for good a very considerable outlet for their oils. During the war years there was little time for this kind of research work, but it is now being pursued all over the world."

Mr. van Ameringen: "Now, what about production? When do you think that it will catch up with demand?"

Mr. Stevenson: "I look for a continuation of our present difficulties for some time. It is true that right now we do not have to worry about sufficient labor. Still we are unable to keep in full production. We are in some respects worse off than during the war. Then, at least, we knew we could count on allocations on a reasonably definite basis and plan our production accordingly. Today we cannot be sure of having the right material in our plant at the right time. The apparatus that took such a beating during the war is still taking a beating. We will not be able to replace it for a long time. For instance, sheet copper and stainless steel, we are told by the mills, cannot be made available for the balance of this year.

"The pharmaceutical industry is using increasing quantities of our products as intermediates for the manufacture of pharmaceutical chemicals. For example, phenyl acetic acid which was never a very large item in the aromatic line, is being used in large quantities in the manufacture of penicillin. That means using raw material and tieing up apparatus. Amyl alcohol is short for the same reason and we have to scrape to produce normal quantities of amyl salicylate. Indol is used as an intermediate in the manufacture of plant hormones. There is an indication that one of the ionones may be used largely, outside of our industry. These are a few of the major examples. My guess is that in view of the increased consumption of our products, the difficulty of providing for increased manufacturing facilities both as concerns apparatus and plant building, it will be about a year before we can figure on catching up with the demand. Just as an indication of the increase in consumption, government statistics show that the production of aromatics increased over 400 per cent between the years 1938 and 1945."

Mr. Stevenson: "We know that practically every country in the world is trying to buy aromatic chemicals in the United States,—and speaking about the rest of the world, you were abroad not so long ago, what is your opinion of the production facilities in Europe at this time?"

Mr. van Ameringen: "As you stated, Europe is at present purchasing whatever quantities of aromatic chemicals they can get in the United States. Before the war, Switzerland, Germany, France and Holland were important producers of aromatic chemicals. Nobody knows what will happen to the German chemical industry. From all reports, physical damage to the factories has been far less than was expected. Of the fifty-seven I.G. plants only two are reported to have been put out of commission by allied bombings. What restrictions the "Big Three" are going to put on the German chemical industry nobody knows as yet, and I wonder whether the governments of Russia, England and the United States have decided on a policy. Germany, besides being a large producer of aromatic chemicals was also by far the largest producer of intermediates, supplying the lion's share of raw materials to the rest of Europe.

"Holland and France are still suffering considerably from disrupted communications, and lack of coal and electricity. England too is still very short of coal. As a matter of fact, even their fishing industry is handicapped by this shortage. Switzerland, of course, is in by far the best condition. They too suffered from a lack of coal, but latest reports indicate that this condition is improving rapidly while many industries there have changed over to fuel oil. Nevertheless, all those countries suffer from an insufficient supply of intermediates. All of them produced intermediates but none of them had a completely developed intermediate industry. Germany and the United States were the only two countries that were fortunate enough to be independent in that respect. In all probability Germany for several years to come cannot be counted on either to supply intermediates to the rest of Europe or to produce aromatic chemicals, and the burden will therefore fall on Switzerland, France, Holland and England. The job of supplying Europe with its needs will be a big task, and how quickly they will succeed in doing that, and how quickly they will succeed in building up production to such an extent that they can export to other parts of the world will depend on three points: How long will it take Europe outside of Germany to build up a self-sufficient intermediate chemical industry? How long will it take before Germany may be able to supply intermediates, and thirdly to what extent will America be able to supply Europe with intermediates? In my opinion, at least several years will be required to accomplish all this."

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Sinclair to Expand Specialties

W. J. Andree, merchandise manager for Sinclair Refining Co., New York, who some years ago was associated with the origin and development of the Sinclair specialty line, has again assumed supervision of specialty sales for that company. E. E. Tompkins, for a number of years connected with Sinclair specialty sales in the east, has been promoted to take direct charge of national specialty sales and to bring out a new expanded line of products including insecticides, polishes, waxes, soaps and automotive items.

New Sinclair sales plans call for the installation of specialty display facilities in all their stations with marked-price items after the style of variety stores, giving the dealer a broader base of Sinclair products on which to work. Sinclair also plans to expand sales to the farm trade and is planning a new movie to be shown in some 2,000 communities next fall to an estimated half-million farmers. An expansion of activities in the industrial and institutional specialty sales fields is also planned. A special program on insecticide application is now being prepared for the company in conjunction with N. J. Gothard and F. O. Huckins, of the East Chicago and Chicago offices respectively. Mr. Andree will continue to make his headquarters in New York.

Graaskamp Amer. Can Sales Mgr.

L. W. Graaskamp has just been named general sales manager of American Can Co. He has been with the company since 1920. He was named assistant district sales manager of the packers' can division for the Chicago district in 1934, and remained there until 1944 when he was transferred to New York as assistant general sales manager.

Honored for Insect Control Work

For his work in control of typhus-bearing insects, Edward F. Knipling of the Bureau of Entomology and Plant Quarantine, U.S.D.A., recently received a medal from Secretary of Agriculture, Clinton P. Anderson. Mr. Knipling aided in the development of control methods of typhus bearing insects, including the adaptation of DDT against body lice and dimethyl phthalate against scrub typhus. Brig. Gen. S. Bayne-Jones, USA, director of the Typhus Commission, read the citation accompanying the medal.

Corl Joins Barber Co.

Cady S. Corl who was recently released from the Chemical Warfare Service, U. S. Army, as major, has become associated with W. H. Barber Co., Minneapolis, as manager of their insecticide department. Mr. Corl was formerly associated with Allaire-Woodward Co., Peoria, Ill. and McLaughlin-Gormley-King Co., Minneapolis. He will take over the Barber insecticide department relieving W. F. Holen of that company who will devote his efforts principally in their naval stores department.

Velsicol Plans New Building

Velsicol Corp., Chicago, manufacturer of insecticides, solvents and resins, has made public plans for a new laboratory and office building to cost $600,000. Located at 320-48 West Grand Ave., just north of the Chicago River, the 3-story building will be 200 x 100 ft. in size and with foundations capable of carrying three additional floors. The structure will be air conditioned and acoustically treated and many interior walls will be of glazed tile or metal. Contractors expect to have the new quarters ready for occupancy by Jan. 1, 1947.

Frailey Addresses Drug Section

Carson G. Frailey, Washington representative of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, addressed members of the section May 22 at a luncheon at the Hotel Pennsylvania on the subject, "Unification of Food, Drug and Cosmetic Laws and Regulations." He pointed to the confused situation which exists as a result of the multiple and contradictory laws which the various states have adopted, and called for the adoption of a fair and adequate model state law as an escape from the present confused situation.

Issues Insect Repellent Report

The Office of the Publication Board of the U. S. Department of Commerce, Washington 25, D. C., recently issued a report that describes the preparation and physical properties of 15 insect repellent compounds. The report is available from the above address on payment of check or money order made payable to the Treasurer of the United States. The compounds described in the report comprise acetates and benzoates of allyl, propenyl, and propyl phenols, phenolic ethers, and a related coumaron. All but one of the compounds were derived from paracresol.

Polish Mfr. Buys Building

Uneeda Polish Corp., 57 Jay St., Brooklyn, has just bought a 2-story building at 166-168 Second Ave., Brooklyn, and will shortly occupy the new quarters.

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NSSA Hold Regional Meetings

National Sanitary Supply Association, Chicago, has announced plans for a series of regional meetings of members to be instituted following the annual convention and tentatively scheduled for New York, San Francisco and Chicago. All will be similar in character to the meeting held recently at Dallas, Tex. Photo herewith shows the banquet session at the first regional meeting held in Dallas.

San. Supplies at Hospital Show

Huntington Laboratories, Huntington, Ind., featured its new "Huntington" foot-pedal soap dispenser for the hospital surgeon at the 16th annual Tri-State Hospital Assembly in Chicago, early in May. "Floor-San," a new floor cleaning compound with a rose odor, was also shown, along with surgical soaps and other items in the company's line for hospital use. J. L. Brenn, president, was in charge of the booth at the Palmer House, assisted by Mott Brown, Cliff Sterling and Evy Fox.

Midland Laboratories, Dubuque, Ia., presented "M L-10," a new germicide and disinfectant, a foot pedal soap dispenser and its regular line of hospital maintenance products. Walter Brown, manager of the company's hospital division, was in charge, with Lee Jacobi, Chicago branch manager, and Carl Goff, Grand Rapids, Mich. representative.

Vestal Chemical Laboratories, St. Louis, displayed its various floor maintenance and hospital sanitation supplies, with J. T. Walker in charge. Wyandotte Chemical Corp's J. B. Ford division showed maintenance cleaners, dish and glass washing compounds, germicides, deodorants, laundry soap builders and a drain pipe cleaner.

"Still making carnauba floor finishes," representatives of Car-Na-Var Corp., Brazil, Ind., assured visitors to its display of cleaners, waxes and floor maintenance machines. The company is expanding production of its two floor seals, Homer F. Pierce, Detroit field man, stated. New equipment utilizing diathermic heating has been installed for production of these products, he said, to obtain better control of the manufacturing process and confer other advantages which will result in a superior product. Other field men at the booth included W. E. Piggott, Springfield, Ill., O. E. Scott, Indianapolis, and E. E. Etscheid, Chicago.

Hild Floor Machine Co., Chicago occupied Booth No. 1 with its line of post-war noiseless floor scrubbing machines. Featured on a sectional program of hospital laundry managers was a talk on "The Use of Metaphosphates in the Laundry," by Don Utesch, Chicago representative of the Calgon Co.

—— • ——

Caramian Returns to Delta

Ara Caramian has returned to his post in Cincinnati as plant manager for Delta Chemical Mfg. Co., Baltimore. Mr. Caramian joined the U. S. Navy in 1943 and served as a Lieutenant in the Hydrographic & Surveying Division during the war.

Test Quaternary Disinfectants

Tests of quaternary ammonium compounds conducted at the New York State Agricultural Experiment Station, Geneva, N. Y., show a "definite future for their use in sterilizing procedure" for food handling and processing equipment. A series of fifteen materials, some not yet commercially available, were studied, according to the station's 1945 annual sport. In some cases, says the report, concentrations as low as one part germicide in 20,000 parts water have resulted in complete killing in five minutes of exposure.

One drawback to future use of these new compounds has been the lack of an accurate and simple field test for the quantitative estimation of germicidal strength. Such a test, the station investigators announced, they have now developed. Addition of an organic dye solution to the solution of germicide results in a color reaction by which the concentration of germicide is shown.

—— • ——

New Lowell Sprayer

Production of the new Lowell "Thoro Spray" electric sprayer and duster has been more than doubled in the past few months, according to V. A. Snell, general manager of Lowell Manufacturing Co., Chicago. This sprayer, equipped with interchangeable liquid and powder attachments, weighs only eight pounds. It is powered by a 110-120 volt Universal AC-DC motor, and carries a 24-ounce insecticide dispensing jar. It is equipped with a time switch making it possible to set the sprayer for automatic operation from one to thirty minutes.

—— • ——

Continental Can Names Jennings

John Jennings has been appointed southeastern district manager of paper container sales for Continental Can Co., New York, the company announced recently. His sales territory will include North and South Carolina, Georgia, Florida, Mississippi, Louisiana, Alabama and parts of bordering states. Mr. Jennings, a graduate of Michigan State College, will make his headquarters in Atlanta.

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Honor J. B. Magnus, 50 Years

A cocktail party on the occasion of his 50th birthday was tendered to Joseph B. Magnus by his associates at

J. B. MAGNUS

Magnus, Mabee & Reynard, Inc., New York, on May 3rd, the affair being held on the penthouse terrace at the offices of A. W. Lewin Co., MM&R advertising agents. Mr. Magnus, second son of the founder, joined the firm in the fall of 1916. Before that time he had been in the banking field. Returning to the company after a period with the U. S. Naval Aviation Service during the First World War, he was elected treasurer of the company. He was named vice-president in 1923, a position which he still holds. Mr. Magnus has long been active in the affairs of the National Association of Insecticide & Disinfectant Manufacturers, recently as a member of the entertainment committee for the two yearly meetings.

Talks on Microcrystalline Waxes

Dr. Ernest Stossel of the University of California, and formerly vice-president of the Warwick Wax Co., West Warwick, R. I., addressed the Sociedad Cientifica Argentina in Buenos Aires recently on "Microcrystalline Waxes Made from Petroleum Residue and Their Industrial Application." Resembling beeswax, but produced at a much lower cost, these waxes are said to be tough, waterproof, highly flexible and chemically inactive. Dr. Stossel outlined a process of his own for the separation of these waxes from crude oil and reported that tests made in Argentina indicated that Argentina crude oil was adaptable for production of these waxes.

Oakite Cleaning Booklet

Oakite Products Inc., New York City, has added to its lengthy line of cleaning manuals a new booklet on "Steam Detergent Cleaning," which describes many applications of the Oakite method for cleaning machinery, equipment and parts, prior to repair, overhauling or refinishing.

Florasynth Coast Set-Up

Expanded manufacturing and distributing facilities on the West Coast with the appointment of new personnel to handle manufacture and sales in that territory were announced recntly by the Florasynth Laboratories, New York, manufacturers of aromatic chemicals and perfuming specialties. West Coast operations will center at San Bernardino, Calif. and Donnet Withington, president of the California Chemical Co. will supervise all Florasynth activities on the Pacific Coast. Merritt V. Eusey is in charge of the Los Angeles office at 912 East 3rd St. Associated with him are Eliot Friberg, former Army captain, and John Allen, former Air Force lieutenant. Walter J. Morehead is in charge of the the San Francisco office at 268 Market St.

At a luncheon for the trade press in New York last month, Charles P. Kramer, Florasynth secretary, outlined plans and background of the company. He stated that Katz family interests have retired from the company and west coast management. William Lakritz, president and co-founder of Florasynth, continues to head the company with headquarters at the main office and plant on Olmstead Ave., Bronx, New York, where it has been located for the past 25 years. Other officers and directors include Mrs. C. F. Senior, wife of the late well-known co-founder, Charles Senior, Joseph Fein, and David Lakritz. Mr. Fein, treasurer, heads the company's purchasing department. Mr. David Lakritz is plant director and chief chemist. In addition to plants in New York and California, the company also has a factory in Chicago.

Twyman Returns to B. A.

E. B. Twyman, president of John Powell y Cia., Buenos Aires, returned to that city last month after a

E. B. TWYMAN

six weeks visit to New York during which time he made his headquarters at the office of the affiliated American company, John Powell & Co., New York. Before returning to South America, Mr. Twyman summarized insecticide market conditions in the Argentine as essentially the same as in the U. S. He pointed out that all people, householders, manufacturers, farmers and cattlemen, are becoming more insect conscious in Latin America, but that lack of funds generally interfered with a wider use of insecticides.

Government agencies in Latin America are aiding in a long-term program to educate the populations in insect control and in stamping out insect-borne diseases. This is especially true in Argentina among agriculturists. That country has built up its own insecticide industry and the products used are of local manufacture due to high import duties. Newer insecticide application methods are not widely used, said Mr. Twyman, but will come in time as a result of education.

In returning to Buenos Aires, Mr. Twyman was accompanied by George Hartz, chief chemist for John Powell & Co., New York, who will spend six months at the Powell plant in Buenos Aires, and also visit the Powell experimental pyrethrum farm in San Juan Province.

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Describe New Raw Materials

Manufacturers of floor finishes and furniture polishes will be interested in a report submitted at the recent National Farm Chemurgic Council convention in St. Louis regarding the production of waxes from sugar cane. Dr. Robert C. Hackett, scientific director of the Sugar Research Foundation, told the gathering of scientists, manufacturers and farm leaders, that satisfactory light-colored hard waxes have been obtained on an experimental basis. Production problems have been solved, he said, and efforts are under way to organize commercial production of cane wax "on a considerable scale." The project, he said, would be an answer to the demand for a product to replace carnauba wax.

Of interest to soap manufacturers and perfumers was another report regarding development of a lemongrass oil industry in the Florida Everglades, presented by Josiah Ferris, Jr., assistant to the president of the United States Sugar Corp., Clewiston, Fla. This project is rapidly assuming a position of importance in the industry and will be developed further, he indicated.

From a 20-million dollar business a quarter century ago, the American insecticide industry has grown until today its products are valued at nearly $100,000,000, L. P. Killilea of Hercules Powder Co. stated in a talk on "The Chemurgic Insecticide." In the past year approximately thirty million gallons of fly spray were made, while for 1946 he declared, "a ten million gallon increase is not impossible and quite likely will be surpassed." War time expansion accounts only partly for the industry's growth, Mr. Killilea asserted, another factor being the American public's increased appreciation of the value of insecticidal use.

A. H. Downey of Magnus, Mabee & Reynard, Inc., New York, reviewed accomplishments in development of domestic sources of various essential oils and in another paper Profs. W. L. Burlison and R. O. Weibel of the Univ. of Illinois reported on progress of experimental work on castor beans in the United States.

R & H Insecticide Booklet

Rohm & Haas Co., Philadelphia, has just issued a new booklet, "Insecticide Formulations for Household, Livestock, Farm and Industry Use." The booklet is designed to give insecticide manufacturers the latest factual information to guide them in reformulating their insecticides, particularly in the light of the introduction of DDT. Where DDT is included in suggested formulas, other insecticidally active materials are also included to speed knockdown and give a balanced formula. A number of emulsifying agents are described and recommendations made. The booklet will be revised periodically as additional information becomes available.

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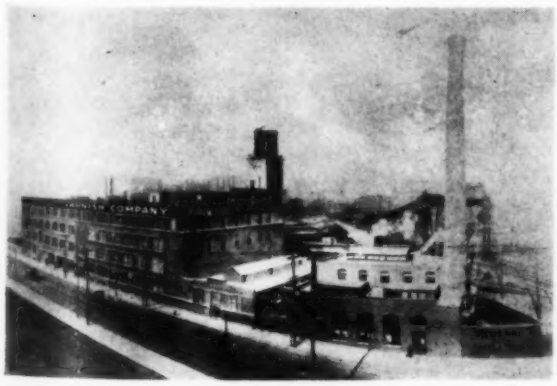
Offer New Linoleum Finish

Lastikpli Laboratories, 169 W. Wacker Drive, Chicago, has announced development of a new linoleum finish, available in pint, quart and gallon containers.



Federal Varnish Co., manufacturers of floor finishes, Chicago, have just announced that shortly they will start moving into new and improved quarters. The company, which is now located at Peoria at Van Buren St., expects to be completely installed in the new plant by the end of this year.

Ind. Management Names Campbell

Industrial Management Corp., Valparaiso, Ind., has announced the appointment of L. W. Campbell, well

L. W. CAMPBELL

known entomologist, as Pacific Coast sales manager of their insecticide division. Mr. Campbell supervised sales in the western states for Tidewater Associated Oil Co. for ten years, and served in the same capacity for five years with Socony Vacuum Oil Co., before taking up technical advisory work in the field of agricultural chemicals. In his new post he will continue to conduct his research on aerosol insecticides for household, agricultural and industrial uses.

—— • ——

Minnesota Eases DDT Labeling

Minnesota will no longer require a poison label on insecticides containing DDT shipped into the state, according to notice received by the National Association of Insecticide & Disinfectant Manufacturers from Henry J. Hoffman, chief chemist, Minnesota State Department of Agriculture.

—— • ——

Orbis Moves Chicago Office

Orbis Products Corp., 215 Pearl Street, New York, moved its Chicago office and warehousing facilities last month to new and larger quarters at 230 West Huron Street, according to Charles J. A. Fitzsimmons, president. Ray A. Morris and Albert E. Miller are headquartered at the new location as Midwestern representatives for Orbis.

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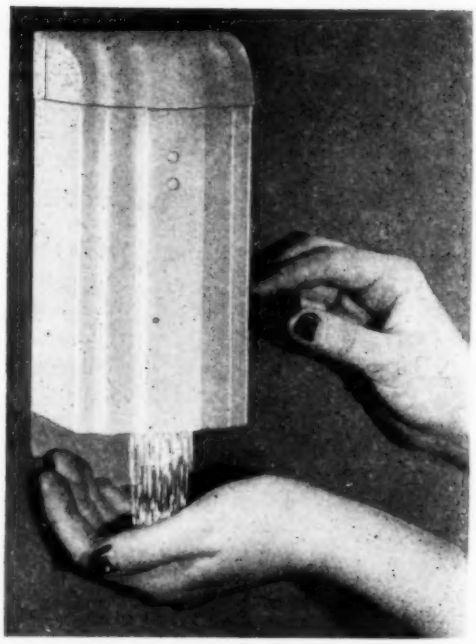

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Miscellaneous

Wanted: Back issues of *Soap & Sanitary Chemicals,* December, 1942 and December, 1944. Wanted to complete bound volumes by insecticide manufacturer. Write to Box 473, care of *Soap & Sanitary Chemicals.*

For Sale: Reconditioned quart oil cans for sale—Sample Free. Connecticut Can Co., Hartford 6, Conn.

For Sale: 1—3 roll granite Mill, width of each roller 12½ x 30. Price $750.00. Good working condition. 1 Dough Mixer, complete with 3 H. P. A. C. Motor two barrel capacity, good for paints, pastes, glues, powders, and plastics. Price $500.00. Triangle 5-8834 or write Box 471, care of *Soap & Sanitary Chemicals.*

For Sale: Ferguson & Haas Automatic, Adjustable Soap Wrapping Machine; Jones Type "E" Automatic Toilet Soap Press with conveyers; 10" Houchin Plodder; 5 Roll Houchin Refiner; Shriver, Sperry 12", 18", 24", 30" Iron Filter Presses; etc. Send us your inquiries. Brill Equipment Company, 225 W. 34th St., New York City.

Wanted: The following back issues of *Soap & Sanitary Chemicals* 1935, 1936, 1937, 1938, 1940, 1941. Communicate write Box 474, care of *Soap & Sanitary Chemicals.*

DETERMINATION OF DDT

(*From Page 167*)

rected in method 5 beginning "Add 2 or 3 drops of phenolphthalein solution."

Discussion

THESE methods have proved applicable and satisfactory for the determination of DDT in many commercial products of varied composition, provided interfering chlorinated compounds are absent. For samples that appear to contain unusual ingredients that may react with the silver nitrate, the oxidation with the hydrogen peroxide and the separation of the isoamyl alcohol-ether soluble matter as directed in method 6 should be used.

If the presence of the so-called liquid DDT isomer oils is suspected in a spray, the actual amount of the DDT may be determined by distilling the solvent at low heat with the aid of a vacuum pump, and using the Cristol[3] method with the residue. The presence of DDT in dusts and powders may be confirmed by the Schechter-Haller[4] colorimetric test. Benzene is an excellent solvent for DDT in various dusts because of the quick settling of the non-volatile components, and as mentioned by Gunther[1], it will dissolve about 45 per cent of its weight of DDT without dissolving an appreciable quantity of any of the inorganic halides that are likely to occur in ordinary products.

Unless chlorine free reagents are available, a careful blank determination should be conducted with all reagents used. Test the decolorizing carbon for the presence of chlorides by heating with dilute HNO_3 (1-4), filtering, and adding $AgNO_3$ solution to the filtrate. If chloride is present, wash with warm dilute HNO_3 until the washings no longer give a positive test.

Prolonged heating on the steam bath to expel the excess benzene is to be avoided, as DDT has a tendency to decompose with a slight loss of hydrochloric acid. The last of the benzene is difficult to expel and that which remains is sufficient to keep the DDT in solution and from decomposing.

Analysis of Prepared Insecticides Containing DDT

Liquid sprays and dusts analogous in composition to certain proprietary products containing DDT were prepared from recrystallized DDT that had a melting point 107°-109° and assayed 49.84 per cent total chlorine or 99.68 per cent DDT by the above described method number 1.

The composition of the test dusts and sprays, and the results of the analyses obtained with the various methods are shown in the accompanying table. (See Page 167.)

References

(1) Gunther, *Ind. Eng. Chem. Anal. Ed.* 17, 149, (1945)

(2) Umhoefer, *Ind. Eng. Chem. Anal. Ed.* 15, 383, (1943)

(3) Cristol, *Ind. Eng. Chem. Anal. Ed.* 17, 470, (1945)

(4) Schechter, Soloway, Hayes & Haller, *Ind. Eng. Chem. Anal. Ed.* 17, 704, 1945.

TRADE MARKS GRANTED

(*From Page 66*)

Rohm & Haas Co., Philadelphia. Claims use since Sept. 25, 1945.

TUFF STUFF—This in upper and lower case, extra bold letters for insecticides. Filed Dec. 5, 1945 by Stuff Insecticides, Miami, Fla. Claims use since Oct. 6, 1945.

WOCOTE—This in upper and lower case, bold, script letters for lens cleaning fluid. Filed Oct. 19, 1945 by Wollensack Optical Co., Rochester, N. Y. Claims use since Sept. 12, 1945.

FOOT-LITE—This in upper case, bold letters for leather polish. Filed Dec. 8, 1945 by K. J. Quinn & Co., Boston. Claims use since Nov. 5, 1945.

CYETON—This in upper case, extra large, bold, black letters for shampoo. Filed Sept. 15, 1945 by Cyeton Products, Los Angeles. Claims use since Apr. 26, 1945.

ORTHO—This in upper case, extra bold, black letters within a round-end frame, the lower portion of which carries in reverse letters the words "Scientific Pest Control" for parasiticides. Filed Nov. 6, 1945 by California Spray-Chemical Corp., Richmond, Calif. Claims use since Sept. 11, 1945.

L'AUTRE FEMME (THE OTHER WOMAN)—This in upper and lower case letters, the words "L'Autre Femme" above "(The Other Woman)" for bubble bath liquid. Filed Nov. 6, 1945 by Oreon Perfumeur, New York. Claims use since Oct. 19, 1945.

POSH—This in upper case, extra bold, black letters for shampoo and bubble bath liquid. Filed Nov. 16, 1945 by Kinghill Laboratories, New York. Claims use since Oct. 24, 1945.

DISTISOL—This in upper case, bold, stencil letters for disinfectant, germicide and antiseptic. Filed Jan. 29, 1946 by Selig Co., Atlanta. Claims use since Dec. 27, 1945.

DOX—This in upper case, extra bold, black letters for parasiticides. Filed Jan. 30, 1946 by California Spray-Chemical Corp., Richmond, Calif. Claims use since Dec. 31, 1946.

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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.

". . . calling Officer Cuthbert! Bring in mad elephant doing damage in Spongoola village! That's all!"

Bring Him In . . .

SOMETIMES, bringing in the order unassisted is more than any salesman can do. Frequently, your salesmen and ours too, run up against tough customers. As time goes on, there are going to be more of this variety. Give your salesmen a hand in softening them up, — the first step toward bringing in the order. How? By regular advertising in the business press reaching the fields and the people whom you want to sell.

If you want to give your salesmen an assist in bringing home future orders from the field of soap products, detergents, cleaners, insecticides, disinfectants, and other chemical specialties, try regular advertising in

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET NEW YORK 1

A.B.C. paid subscription renewal rate for year ending October, 1945—88.4%

Tale Ends

REMEMBER the Robinson-Patman Act? That's the law which says that you must sell everybody at the same price. At the recent Toilet Goods Association meeting in New York, one speaker, reaching back into the grave, inadvertently mentioned that it is still on the statute books. Inasmuch as it doesn't seem to work and nobody appears to pay any attention to it, we must admit that we too had forgotten about its existence.

* * *

Relax, gentle reader! The leering threat of inflation has been buried. OPA took the ceilings off fly swatters last month. Not to mention also canes, key chains, cuff buttons and false teeth.

* * *

Without soap fat quotas, a small Alabama soaper told us recently, he would have been out of business two years ago. He stated that he would have been unable to buy cottonseed soap stock and other foots used in producing soap powders, as his suppliers would have used it in their own soap factories.

* * *

The new proposed Federal Insecticide Act which has been the object of a quiet, yet determined battle in and out of the hallowed halls of Congress for the past six months, is now reported unlikely to pass at the present session. Inasmuch as the lawmakers will adjourn about July 1 so that they can go home and get ready to be reelected next November, it means that any new bill will have to wait for the new Congress in 1947.

* * *

Want a real belly laugh? Get a copy of "Compilation of Insecticide Formulae" put out by J. J. Berliner & Staff, New York and read some of the formulas suggested. Most of them must have been compiled back in the Gay Nineties. The "compilation" is almost worth the $6 or so they get for it because of the laughs it contains!